The Construction, Building Products and Services Markets in Hong Kong

February 2001

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The Construction, Building Products and Services Markets in Hong Kong

February 2001

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THE CONSTRUCTION, BUILDING PRODUCTS AND SERVICES MARKETS IN HONG KONG

Team Canada Inc • Équipe Canada inc

EXECUTIVE SUMMARY

Hong Kong has one of the world's most dynamic construction industries, yet is almost entirely dependent on imports of building products. Major infrastructure projects, new tourist attractions, new transportation links, commercial and industrial development, and public and private housing development all provide excellent opportunities for Canadian exporters of building products and providers of construction services.

Although the recent economic slowdown has had some negative effects on Hong Kong's construction industry, the future remains promising as the local economy continues to recover. The construction industry and the demand for building products in Hong Kong are being fuelled by various factors, such as new housing policies and improved government housing programs, new tourist attractions, demographic trends, urban restoration, the development of new towns and the need for more quality housing and efficient buildings.

Key growth areas in the Hong Kong market include prefabricated building components; exterior structural components; windows and doors; building chemicals and insulation products; lumber and value-added wood products; and security products. Moreover, energy-efficient building products and intelligent building systems (IBS) are believed to be some of the potential areas for future development. Both the Hong Kong government and the private sector are proactively pursuing energy efficiency as a key issue in the construction of new buildings.

Other building products or technologies that reduce the use of labour, save on construction time, and support high-rise structures are generally favoured by the market. There are also numerous opportunities for Canadian architectural and construction services firms to help Hong Kong design and construct a new era of environmentally friendlier high-rise buildings, which are safer, more comfortable, and more resource and energy-efficient.

As an open market and because of Hong Kong's access to the Chinese market, competition in the building products and construction services sector is keen, with major players from Australia, China, Japan, Italy, the U.S., Germany, Spain and the United Kingdom.

The market for building products and construction services in Hong Kong holds good potential for Canadian exporters. However, Canada is still not perceived as a major supplier, and only a few Canadian companies are actively pursuing the opportunities in this market. Some of the Canadian products that have fared well in Hong Kong include engineering equipment, wood and wood-based products (particularly hardwood flooring and softwood for concrete formwork), and aluminium window frames.

To be successful in the Hong Kong market, Canadian exporters must be able to offer good-quality products and innovative solutions at a competitive price, as Hong Kong customers tend to be highly price-sensitive. Companies are also urged to market their products by emphasizing special features such as low maintenance, technical support or energy efficiency.

Familiarization with local business culture; strong advertising campaigns; and working with a reliable, knowledgeable agent or distributor are key to success in the Hong Kong construction market. To facilitate market entry, Canadian exporters are also encouraged to seek a local partner to facilitate navigation of local regulations and expectations.

N.B. While the vast building material market may be divided into various segments, this report examines niche opportunities in the construction and building products markets of Hong Kong. The report does not provide a complete account of all sub-sectors but, rather, presents selected categories which have been identified as offering strong potential opportunities for Canadian building product exporters and service providers.

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THE CONSTRUCTION, BUILDING PRODUCTS AND SERVICES MARKETS IN HONG KONG

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MARKET OVERVIEW

Construction & Building Materials Industry

Hong Kong's construction industry experienced a remarkable expansion during the past decade. In 1999, the gross value of construction work amounted to more than $24.1 billion[1] ($HK126 billion), and $5.9 billion ($HK31 billion) for the first quarter of 2000. Moreover, the gross value of investment in construction activities accounted for approximately 40% of total fixed investment in 1999.

Analysed by type of construction work, the gross value of construction work performed at private-sector sites in 1999 totalled $8.5 billion (HK$44.3 billion), representing a decrease of 27.7% compared to 1998 figures. This decline was largely associated with the decisions of some property developers to suspend construction projects amidst the Asian financial crisis in 1998. The gross value of construction work performed at public-sector sites in 1999 amounted to $9.4 billion ($HK49.2), representing an increase of 20.8% over 1998. Public-sector civil engineering output declined in 1999 following completion of Airport Core Program projects in 1998.

Analysed by end use, the residential building sector was the largest end-use group of construction activities in 1999. The gross value of construction work performed for residential projects in 1999 was $10.8 billion ($HK56.2 billion), representing an increase of 15.3% over 1998. Transport and commercial building projects constituted respectively the second- and third-largest categories of construction site work.

In March 2000, Hong Kong had a total of 1 000 construction sites employing over 74521 workers. The employment level for the broader building, construction and real estate sectors is over 180 000, including such professionals as architects, surveyors, structural engineers, building services engineers and civil engineers.

In building terms, the ongoing refinement of new buildings in Hong Kong have been fascinating — while tower heights in residential building have further increased, there has also been a trend toward greater floor-to-floor dimensions.

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[1] All monetary amounts are expressed in Canadian dollars, unless otherwise indicated. The conversion rate to Canadian dollars is based on IDD Information Services, *Tradeline*, July 2000.

In 1999, the building materials market in Hong Kong was valued at $1,566 million (US$1,054 million), while total imports amounted to $2,911 million (US$1,959 million). Although much of Hong Kong's aggregates and basic construction materials are available locally or from nearby regions such as China and Macau, the city still relies heavily on imports of building products because local production is too small to meet demand. More specialized materials tend to be imported from overseas.

Table 1. Hong Kong's Building Products Industry ($ millions)

	1997	1998	1999
Total Market Size	4,530	2,993	1,566
Total Local Production	1,108	890	713
Total Exports	2,145	2,595	2,911
Total Imports	5,568	4,697	3,763

Source: "*Country Commercial Guides for FY 2000:Hong Kong,*" U.S. Embassy in Hong Kong, July 1999.

Due to the high cost of land, Hong Kong is dominated by concrete and steel based high rise buildings. Timber is not used as a permanent structural material in Hong Kong.

Curtain walls and other cladding construction systems are widely used on commercial buildings.

Residential Construction

The housing sector in Hong Kong has developed rapidly over the past two decades. Permanent housing stock almost doubled in the past 15 years from 1.06 million units in 1983 to 2.08 million units in 1998. However, with a population of approximately 6.9 million and growing, both the public and private sector have to continue to cope with the increasing demand for housing by producing an increasing number of houses for the general public.

In 1998-1999, public expenditure on housing amounted to $7.5 billion (HK$38.9), or 14% of total public expenditure. Housing works are carried out by both the public and private sectors. The Housing Authority[2] (HA) and Housing Society both construct public housing. Many developers in Hong Kong are occupied with private-sector projects. The developers nominate architectural firms to undertake project design. A main or general contractor is then appointed to handle civil engineering works and erect the superstructure. The main contractor normally source building products through different

[2] For contact information regarding key organizations mentioned in this report, see **Key Contacts and Support Services**.

sub-contractors who will also do the installation. With respect to product selection, all of these players are integral to the decision-making process.

About 38% of Hong Kong's total population lives in public rental housing, 13% in assisted Home Ownership Scheme (HOS) flats, 47% in private housing and about 2% in interim/temporary housing.

The Hong Kong government continuously rates housing as a priority. During the past two decades, the government has steadily improved the quality of its public-housing program. Through its Home Ownership Scheme (HOS)[3] and Private Sector Participation Scheme (PSPS),[4] the government has provided shelter with basic facilities to all those in need. Home ownership rate, though still low by international standards, has passed the 50% mark, representing a third more than 10 years ago. Private developers have also invested massively in producing flats for nearly a million households.

Table 2. Hong Kong's Housing Stock by Type (1985, 1990, 1995, 1999)

Year		Public			
	Private	Rental	Subsidized Sales	All	Total
1985	592 165	562 333	67 807	631 261	1 223 426
1990	752 170	666 699	130 067	799 267	1 551 437
1995	885 677	692 280	208 298	904 748	1 797 548
1999*	1 001 695	683 679	284 872	974 171	1 975 866

* estimated

Source: "*Time to Review Hong Kong's Housing Strategy*," April 2000. Downloaded from Hong Kong's Housing Strategy **http://www.tdctrade.com/econforum/sc/ 000402.htm**.

[3] HOS: the government identifies land, designs the estates, builds the flats, sells the flats to qualified applicants, and manages these flats after they are occupied. These HOS flats are of better quality than the public-rental flats. The aim of the HOS scheme is to encourage those tenants of the public-rental flats, whose financial situation has improved over the years, to move out of the public-rental flats by buying an HOS flat.

[4] PSPS: private-sector developers bid for the right to build HOS estates according to government design. The finished flats are then purchased by the Housing Authority at a pre-agreed price, for future sale to selected buyers.

Table 3. Residential Flats Newly Completed by Type (1994,1998-1999)

Type	1994		1998		1999	
	Units ('000)	%	Units ('000)	%	Units ('000)	%
Public rental flats	17.1	30.5 %	14.1	25.8%	29.4	34.5%
Subsidized sale flats*	4.4	7.9%	21.1	38.6%	22.5	26.4%
Private flats	34.5	61.6 %	19.5	35.6%	33.2	39.0%
Total	56.0	100%	54.7	100%	85.1	100%

*Includes flats built under the Home Ownership Scheme, Private Sector Participation Scheme and Middle Income Housing Scheme of the Hong Kong Housing Authority, and those built under the Flat for Sale Scheme and Sandwich Class Housing Scheme of the Hong Kong Housing Society.

Source: *Land, Housing, Building, and Construction*, Census and Statistics Department, **http://www.info.gov.hk/censtatd/eng/hkstat/hkinf/land** .

Despite achievements in the past years, housing remains a social problem in Hong Kong. The city faces a growing population in a limited land area; long queues for public rental housing; unsatisfied demand for home ownership and a growing number of elderly people in need of appropriate housing. Since the 1970s, the government has adopted a consistent approach to these problems.

Commercial and Industrial Construction

Hong Kong's commercial sector continues to grow, encompassing the development of various office blocks, shopping facilities and tourism needs.

Hong Kong has been particularly famous for its high-rise building technology. This can be proven by its many class-A office skyscrapers and commercial facilities, such as the Bank of China Building, the Central Plaza, the Cheung Kong Centre, the International Finance Centre and the Hongkong Bank. These corporate towers house some of the major multi-national companies and financial institutions.

Booming mainland re-export trade, increasing demand for high-tech data centres, and expanding floor space requirements by technology companies are other factors that contribute to an overall uptake in Hong Kong's commercial and industrial construction sectors. Between 1999 and 2000, factory rental rose by 4.4% and industrial office building rentals rose by 6.8%. Rentals of new industrial-office buildings are forecast to rise by 9% in 2001, in anticipation of the growing demand for additional data centres, factories, logistics centres and warehouses benefiting from the anticipated increase in mainland trade.

Notable recent commercial construction projects include Cyberport, a 26-hectare comprehensive working and living facilities designed to develop Information Technology and Information Services sectors in Hong Kong, and a new 22-hectare "Hong Kong Science Park" (Pak Shek Kok) to facilitate the development of new technologies and industries in Hong Kong. Furthermore, according to the Hong Kong Tourist Association, the number of hotels in Hong Kong is forecast to increase from 89 in 1998 to 113 in 2006. It is reported that some 50 schools are also planned for construction over within the next three years, while six hospital facilities will be built within the next few years.

China's expected entry into the World Trade Organization (WTO) represents another important factor fuelling the growth of foreign companies and service providers establishing an office in Hong Kong. Industrial-office buildings are the main beneficiaries of this rising demand for new floor space. Office development in the next few years is therefore expected to bring huge amounts of construction supply to the region. Total Grade A stock in the territory is currently estimated at about 4.3 million square metre (46 million square feet). New stock coming on stream will increase this figure by almost 50% or an additional 2.1 million square metre (22.4 million square feet). The bulk of new commercial/office construction is concentrated on the newly reclaimed sites in Central and West Kowloon, as well as in Wanchai North (a popular commercial district for multinational companies).

Table 4. Private Buildings Newly Completed by End Use (Floor Area = 1000 m^2)

End-use	1994 (% change from previous year)	1998 (% change from previous year)	1999 (% change from previous year)
Total Usable floor area	2896 (+11.1)	2526 (+36.7)	2631 (+4.1)
Commercial	746 (+1.1)	872 (+61.2)	589 (-32.4)
Industrial	406 (-3.5)	399 (+1.9)	195 (-51.1)
Residential	1255 (+30.5)	875 (+22.9)	1365 (+56.1)
Other	488 (+0.2)	380 (86.6)	482 (+26.7)
Total cost of construction ($ billion)	$4.7 ($HK 26.8)	$10.1 ($HK 52.5)	$11.7 ($HK 60.9)

Source: *Land, Housing, Building, and Construction* , Census and Statistics Department, **http://www.info.gov.hk/censtatd/eng/hkstat/hkinf/land** .

Infrastructure Construction

Hong Kong's modern and efficient infrastructure supports its role as a trade entrepot and regional financial and services centre. As rapid economic growth placed severe demands on that infrastructure, particularly on transportation and shipping facilities, the government responded with a major infrastructure development program. In 2000-2001,

$5 billion ($HK26 billion) was budgeted for infrastructure upgrading, encompassing buildings, lands and planning, transport and water supply.

The Airport Core Program represented one of Hong Kong's biggest infrastructure projects. Chek Lap Kok airport (opened on July 6, 1998), a $13 billion (US$9 billion) project, is part of a $29 billion (HK$155 billion) development, which includes expressways and Phase I of Tung Chung New Town to house up to 20 000 airport employees. All the related roads, bridges, railway and tunnels have also been completed.

The conclusion of the Airport Core Program, however, does not end the Hong Kong government's commitment to a world-class infrastructure. The city continues to press ahead with infrastructure modernization and developments. For example, Hong Kong has plans to invest $44 billion (US$30 billion) over the next five years to further enhance its competitiveness as a regional business and financial centre. Significant projects include a planned expansion of container terminal facilities, additional road and railway networks, new land in Kowloon, Hong Kong & New Territories for housing as well as commercial, retail and recreational purposes, sewage and telecommunications facilities. The region has also embarked upon a series of high-profile projects, including Cyberport, Hong Kong Science Park and the Disneyland Theme Park. Beautification of Hong Kong Harbour, including construction of promenades, open plazas, landscaped areas, marinas, shops and restaurants are also in the city's future plans. Highlights will be the development of a major performance venue in the West Kowloon reclamation and a sports complex in South East Kowloon.

All of these projects are expected to lead to the construction of additional commercial and residential buildings, which will in turn lead to huge demands for building components and construction expertise.

Architectural Design and Interior Design

The current architectural styles in Hong Kong are mainly dictated by those in vogue in the United States. Trends focus toward a futuristic look, which is functional, lighter in appearance and requires easy maintenance in practice. Architects collaborate with engineering consultants of their choice in order to fulfil the project's requirements.

The Architectural Services Department (ArchSD) is responsible for the design of Hong Kong's public buildings (e.g. government offices, government subsidized hospitals, schools, and recreational and cultural facilities). The public sector's main demand is "value for money." This is defined by low-maintenance buildings that are constructed on time and at low costs. Architects are constantly advised to choose products with price in mind, and to choose new products only if they are "much better and the same price" or "as good and cheaper."

Architects in Hong Kong work closely with their clients or developers/investors in the private sector. Large architectural firms form teams to handle different stages of architectural services, such as project design, administration and production. Attention is paid to all aspects of the project — from the initial research to the brief analysis, land assessment, master planning, architectural design, documentation, cost control and supervision. Architects in Hong Kong consider the wishes of their clients as critical. There is no tariff or import duties imposed on building products, specifications of products from all over the world can effectively be made.

The interior design and maintenance service markets have been rising steadily in the past decade and are now emerging as rapidly growing sectors in Hong Kong. The three project areas where interior design services are in high demand are mainly in the private sector. These include:

- luxury residential blocks which are leased;
- quality commercial buildings including banks; and
- prestigious hotels.

In the public sector, interior designers from the private sector are engaged only in projects where prestige is an important factor. Interior designers play an important role in the specification of interior fittings. Quality and cost competitiveness are important criteria in product selection. As in architectural design, Hong Kong interior designers tend to look at U.S. design trends for inspiration.

The ongoing strive for innovative technology, the care to conserve the environment and the realization of the concept of sustainability will be the major factors dictating Hong Kong's architectural design in the next few years. Accordingly, future architectural styles in Hong Kong will place strong emphasis on a rather universal form, clear geometrical expressions, functional treatments, along with the integration of advanced building technologies, and the manipulation of natural lighting and ventilation systems.

Other major construction-related services currently provided in Hong Kong are project planning, engineering design and project management.

Key Factors Shaping Market Growth

The construction industry and the demand for building products in Hong Kong is being fuelled by various factors, such as the economic outlook; housing policies and government housing programs; demographic trends; urban restoration and the need to renovate deteriorating buildings; as well as the need for more quality housing and efficient buildings.

Economy

After a very painful recession brought about by the financial and economic crisis that affected the entire Asian region, Hong Kong's economy began to recover in the second quarter of 1999, and the recovery has continued to strengthen. Unemployment stood at a very high 6.2% for 1999, but has now fallen to 4.9%. Gross domestic product (GDP) rose by 3% in 1999, after contracting by 5.1% in 1998. In August 2000, the Hong Kong government forecast for 8.5% GDP growth for the full year 2000. This came after a year-on-year GDP growth rate of 14.3% and 10.8% respectively for the first and second quarters of 2000. The outlook for the medium term is generally positive; the economy is expected to be underpinned by continued robust exports and a sustained pick-up in domestic consumption, for approximately 4.0% growth per annum until 2003.

Table 5. Economic Forecast Summary for Hong Kong (%)

	1998	1999	2000*	2001f
GDP	-5.3	3.1	8.0	4.0
Nominal GDP	-4.7	-2.3	4.4	3.3
Private Consumption	-7.4	0.8	5.5	4.0
Public Consumption	0.6	3.4	3.0	1.0
Fixed Investment	-7.5	-17.3	6.8	7.5
Composite CPI (Yr/Yr, %)	2.8	-4.0	-4.0	0.5

* estimate
f forecast
Source: Census and Statistics Department; CEIC; MSDW Research at **http://www.msdw.com/GEFdata/digests/latest-digest.html#anchor1** .

Hong Kong's economy and the construction industry and property sector as a whole are closely linked. The construction sector has been through a series of booms and slumps since 1995. Prior to the Asia financial crisis, the property sector accounted for 60% of government revenue, primarily through land sales; over 40% of bank lendings were related to building financing and home mortgages; and total market capitalisation of all property-related stocks was about 40%.

With consumer confidence surging in the run-up to the handover in July 1997, average private residential prices rose by 65% between 1995 to 1997. In the last quarter of 1997, property prices dropped by an average of 50% as a result of the Asia financial crisis and rising interest rates caused by attacks against the fix link between Hong Kong and US dollars.

Nevertheless, it is widely believed that this downturn has now bottomed out. Private housing development activity has gained momentum since the beginning of 1999,

reflecting renewed interest by developers in starting or speeding up construction. In the long run, most analysts report that the construction market will pick up, as GDP continues to grow.

Housing Policy and Government Incentive Programs

Housing policy in Hong Kong is formulated, co-ordinated and monitored by the Housing Bureau. The Government's housing policy objectives are to reduce the number of inadequately housed people in Hong Kong, to help all households gain access to adequate and affordable housing, and to encourage home ownership in the community.

To ensure that its policy objectives can be achieved, the Government will:

- assess housing demand regularly and accurately;
- provide a sufficient supply of land for housing, together with supporting infrastructure, and shorten development procedures;
- draw up and maintain a long-term flat production programme and put in place an efficient mechanism for monitoring progress and solving problems;
- create conditions to enable the private sector to make the fullest possible contribution towards meeting the demand for housing, while at the same time monitoring the private property market and, if necessary, taking measures to prevent drastic fluctuations in flat prices;
- implement subsidised housing schemes and loan schemes to enable those in the relevant income groups to buy their own homes;
- provide public housing at reasonable rents to those who cannot afford any other type of housing; and
- implement initiatives to address the housing requirements of groups in special need.

Housing for Hong Kong's Growing Elderly Population

The growing number of Hong Kong's elderly will also require an adjustment to the construction of apartments and residences that cater to the special needs of the aged. It is estimated that at the end of September 1999, about 540 000 people over the age of 60 lived in public housing flats, representing 56% of Hong Kong's elderly population.

The government will continue to give elderly people in need priority access to public housing through various allocation schemes. The target is to allocate public rental flats to elderly people on the waiting list within two years of application. The government will also launch a "Senior Citizen Residence Scheme" on a pilot basis, which will provide small flats, with integrated medical and other facilities, on a "lease for life" basis to elderly people in the middle-income group.

Housing Standards

Since 1971, Hong Kong's public housing standards have steadily improved. Housing changed from a merely short-term "emergency sheltering" strategy, to a long-term, massive supply of rental housing stock and home ownership stock to improve health, privacy, natural lighting and ventilation. Since the end of 1980s, an emphasis has been placed on upgrading and improving living quality. Revising design standards by increasing the dimensions of kitchens, living and sleeping areas has become one of the top priorities of housing design. In terms of residential area per person, the density target has improved from 2.2 m^2 in the 1950s to the current 8.8 m^2.

Demographics

In the last century, Hong Kong has evolved from a small fishing village to one of the world's leading metropolises. The city's population has grown by approximately 1 million per decade over the past 20 to 30 years and is forecast to grow up to 7.5 million by 2011 and 8.2 million by 2016.

Although it is one of the world's 10 largest trading economies, Hong Kong has a land mass of just 1096 square kilometres. With 6.9 million people, Hong Kong is one of the most densely populated areas in the world. About 1.3 million people live on Hong Kong Island, around 2 million in mainland Kowloon, and the remainder in the New Territories and Outlying Islands. Hong Kong's land population density per square kilometre stands at 6300. Kwun Tong, with 54 620 people per square kilometre, is the most densely populated district.

Due to the shortage of land, accommodation is very expensive. The vast majority of residents in Hong Kong live in high-rise flats (apartments/condominiums). It is not uncommon for a family of four to live in an apartment of less than 46.5 square metre (500 square feet).

Single-family concrete houses are sparse in number, and are largely mansions scattered in and around the hills of Hong Kong Island's south side. These are home to Hong Kong's wealthy upper class.

Table 6. Population Density and Number of Households by Area

Area	*1994 (Persons per sq. km)*	*1998 (Persons per sq. km)*	*1999 (Persons per sq. km)*
Hong Kong Island	16 380	17 528	17 695
Kowloon	42 799	44 992	45 470
New Territories and Islands	2 822	3 353	3 475
Number of Households ('000)	1 762	2 042	2 108
[% change from previous year]	[+3.2]	[+4.1]	[+3.2]

Source: *Population and Vital Events* , Census and Statistics Department, **http://www.info.gov.hk/censtatd/eng/hkstat/hkinf/population/population_index.html** .

Urban Restoration and Development of New Towns

It is reported that the average life span of a building in Hong Kong is less than 30 years, and many existing buildings are in very poor condition and reaching obsolescence. Much of the problem is caused by poor maintenance.

Hong Kong's commitment to rejuvenating the inner city and adopting innovative approaches to the development of new towns will provide profitable opportunities to Canadian providers of building products and construction services. The following presents Hong Kong's main strategies in the area of urban design and urban planning:

- to repair or redevelop 3230 dilapidated buildings (which are more than 30 years old) in Hong Kong's older urban areas and to create 55 250 flats as part of its urban renewal program;
- to improve the quality and standard of living for Hong Kong citizen, by increasing the "floor area per person" of citizen from the current 8.8m^2 to 10.5m^2 by the year 2030;
- to propose a mandatory building safety inspection scheme that would require building owners to carry out inspections and undertake maintenance work;
- to diversify building forms and urban designs in order to break the monotony current standardized designs, which give the impression of excessive central government control on the environment built in Hong Kong;[5] and

[5] In the past, too much emphasis was put on easy maintenance of buildings, which led to uniformity and singular design with little variations. Today, the government is encouraging the adoption of different architectural forms and building methods for public estates and public buildings, to ensure

- to encourage sustainable and environmentally friendly building designs.

Furthermore, Hong Kong has developed nine new towns (see Appendix A for further details) and several new rural townships since the initiation of its *New Town Development Program* in 1973. This is designed to help the country cope with the increase in population and to improve the living environment by decentralizing the population from the overcrowded urban districts. About 3 million Hong Kong residents, representing more than 40% of the total population, are now living in the new towns and the developed major rural townships. The ongoing construction projects in Hong Kong's new towns are expected to lead to an increasing demand for imported building products as well as construction expertise.

Quality Improvement in Buildings

It has been reported that despite paying some of the highest property prices in the world, Hong Kong residents and businesses are not getting quality buildings or value for their money. While structural design standards in Hong Kong are very high, there is a problem with quality control and quality assurance during construction. Structural defects, shoddy workmanship and poor living and working conditions are the norm rather than the exception in Hong Kong. Building management is even more of a problem. Rapid deterioration, poor fire safety, rubbish accumulation and illegal structures plague many of Hong Kong's older buildings.

Improving the quality of construction and setting overall quality improvement of residential buildings has therefore become a key point in the industry's future work. The following items have been identified as the main areas of design concern:

- resources and energy efficiency;
- low-cost operation and maintenance;
- reduction in building-related illnesses;
- increase in building durability and flexibility; and
- reduction in waste and pollution.

Another factor to be considered is the fact that the scarce supply of land demands that buildings in Hong Kong be constantly constructed to greater heights. This in turn, demands the use of the latest technologies in design and construction of high-rise buildings. Moreover, Hong Kong's construction industry is still extremely labour-intensive. Over the past decade, the Hong Kong Housing Authority (HA) has taken the lead in reducing this dependency through the wider use of standard block designs, precast facades, drywalls and standard building components. In the years to

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better balance between functional convenience and aesthetic quality.

come, Hong Kong's construction industry will continue to promote mechanization of the construction process, for example, through the wider use of system formwork and prefabricated building components.

In the short to medium term, Hong Kong's construction industry will be working to achieve shorter construction periods, lower costs, higher quality and environmentally friendly buildings. Strenuous efforts are also under way to enhance the quality of public housing. The acquisition of new building designs and products will therefore help the city meet these expectations.

In the long run, Hong Kong will strive to become a city that is innovation-led and technology-intensive, while maintaining its international and cosmopolitan nature. The call for a better quality of life and concern for sustainable development will also be reflected in future building standards, and hence the need for advanced and high-quality building materials and technology.

Energy-Efficient and Intelligent Buildings

The intelligent building concept and energy-efficient or "green building" design are increasingly regarded by property developers, architects and engineering consultants as a value added to projects that would attract potential buyers and tenants. The growing environmental and technological requirements of buildings are opening up opportunities for new innovation energy saving equipment, environmental friendly building products and building services systems. Materials, systems and designs that enhance energy management and complement to the concept of "intelligent building" will be the focus of construction industry in the coming years.

Energy-Efficient Buildings

Hong Kong is a high-rise and high-density city with a subtropical climate. With an average annual temperature of 23°C, the heating demand in most buildings in Hong Kong is not significant. However, cooling requirements are large during the summer months (May to October). The humidity level also remains high from February to September (average summer humidity is 60%), presenting a need for dehumidification or sufficient ventilation in most buildings to maintain comfort.

Hong Kong consumes tremendous amounts of energy for its size. In 1999, total energy consumption topped 34 850 million kilowatt hours (kWh) with nearly 60% of the energy going toward the operation of commercial buildings. Further, it is believed that a significant portion of the electricity use in buildings is for air-conditioning in the summer months. According to energy professionals, more energy-efficient design features in new building construction could bring significant energy savings within a few years. For existing buildings, better management could easily result in energy savings of up to 15%.

Despite a cost of 17.2 cents (US11.6 cents) per kWh, the relative price of electricity in Hong Kong is still low compared to the price of property. Thus, for years, consumers in Hong Kong have not had the necessary incentive to considerate energy-conscious design of buildings. However, during the economic recession in the late 1990s and the subsequent sharp decline in property prices, the value of energy efficiency became increasingly apparent to both the government and the private sector. As a result, the Hong Kong market for energy-efficient buildings has gained much public attention in recent years.

Energy-efficient building materials are now a new focus for Hong Kong. It is anticipated that building developers, energy managers and designers will increasingly adopt environmentally sound practices in future projects. It is reported that the sector will continue to mature during the next five years, and will remain an attractive sector in Hong Kong; projected increases in sales will therefore lead to opportunities for Canadian energy-efficient building material suppliers.

The Hong Kong government is aggressively uniting all efforts to promulgate laws and regulations to encourage energy-saving and environmentally friendly practices. Since 1980, legislation regarding energy efficiency in buildings has been under consideration by the Hong Kong government. In 1991, the government created the *Energy Efficiency Advisory Committee*. The Committee recommends proposals to improve long-term energy-efficiency policies. In 1994, the *Energy Efficiency Office* was set up within the Works Bureau to provide expert advice on the potential for energy savings, and to plan, implement and monitor energy-efficiency programs.

The Electrical & Mechanical Services Department (EMSD) is the lead government agency charged with drafting energy-efficiency guidelines for building energy codes, developing an energy end-use database, and instituting energy-efficiency labelling for household electrical appliances. EMSD publishes a code of practice for energy efficiency, and it develops and implements regulations regarding energy management in government and public buildings.

In 1996, EMSD started a three-year Pilot Energy Management Program to implement energy audit and minor energy management opportunities (EMOs) in a number of public and government buildings. This Program is focussed on the Cat. 3[6] EMOs by replacing existing equipment with energy-efficient equipment or by adding equipment to achieve significant energy savings. The following works have been completed in some government buildings:

[6] EMOs are categorized as Cat. 1, Cat. 2 or Cat. 3. Cat. 1 requires practically no practically no cost to implemen, Cat. 2 can be implemented with little cost and Cat. 3 requires significant capital involvement and is relatively complex to implement.

- retrofit with electronic ballasts for fluorescent lighting;
- addition of variable-speed drives (VSDs) for fresh air handling units (FAUs) and secondary chilled water pumps in A/C Plant Rooms;
- addition of VSDs for secondary chilled water pumps in A/C Plant Room;
- improvement of energy-efficient lighting installations; and
- additions of energy-efficient motors, carbon dioxide detectors and variable-speed drives for FAUs and variable-air volume (VAVs) air-handling units;

Several other government buildings have also been scheduled for EMO implementation and are to be completed soon.

The major types of energy-efficient equipment installed under the Program include electronic ballasts for fluorescent lamps, good thermal insulating materials and VSDs for air-conditioning systems. With the successful completion of the first three-year implementation program, EMSD anticipates that there will be numerous opportunities to implement further energy-saving components in Hong Kong's existing and newly built buildings. This represents great potential for Canadian companies offering new innovative energy-efficient products/technologies.

In addition to the government's efforts, some property developers and building management companies have also realized the benefits of providing energy-efficient building products and systems. Some property developers have even placed new energy-efficiency requirements in their lease agreements.

The following represent some of Hong Kong's most outstanding energy-efficient buildings. Each holds some type of energy-efficient technology or special architectural conceptual design:

- Hotel Nikko, Tsimshatsui;
- Lingnan College (Tuen Mun New Campus), Tuen Mun;
- Public Records Office Building, Kwun Tong;
- Castle Peak Hospital Redevelopment (Phase), Tuen Mun;
- City University of Hong Kong, Kowloon Tong;
- Haven of Hope Hospital, Tsuen Kwan O;
- Hong Kong Industrial and Technology Centre, Kowloon Tong
- Island Shangri-La Hotel, Admiralty
- Palace Mall, Tsimshatsui
- Verbena Heights Housing Development, Tseung Kwan O

Long-term benefits of energy savings are, however, not fully appreciated by all developers or tenants; some find it difficult to justify spending money up-front on energy-saving upgrades, while others are concerned about the payback period on their investment. Thus, it might take several years before more companies are convinced of the true benefits of "energy-efficient" buildings.

At the commercial level, the demand for energy efficiency is economically driven. The economic recession of the late 1990s induced many property developers and building owners to encourage energy-efficient design in new buildings. Analysts predict that in the next few years, as the economic situation continues to improve, there will be significant demand for technological improvements — particularly relating to energy conservation — in the construction of both new and renovated commercial space.

Intelligent Buildings

Although introduced only 20 years ago, the use of intelligent building systems (IBS)[7] has increased significantly in Hong Kong's construction industry. IBS are believed to be one of the potential areas for future growth and development within Hong Kong's construction industry.

IBS products and technologies are now stepping into a complete reforming area, with traditional, old-fashioned building equipment and management being superseded by more advanced, energy-efficient automatic equipment and high-tech management styles. Thus, computer-based control systems have become the rule in most new commercial and industrial buildings, generating significant energy savings while improving system performance, operability and reliability of buildings. In short, "intelligent building" represents an evolving understanding and use of computerized technology, structurally advanced building design and construction.

The first building systems to be electronically enhanced in the late 1970s were HVAC (heating, ventilating and air conditioning) systems. In the 1980s, the automation of occupant-safety, security and lighting systems followed, with much refinement in the response and co-ordination aspects within individual systems. Today, there is a growing number of new buildings in Hong Kong that incorporate energy-controlling functions, which are thus perceived as being "intelligent." However, due to the fact that there is still no universally recognized definition of IBS, it is inevitable that these buildings provide different standards and levels of building intelligence.

The *One International Finance Centre* and the *Cheung Kong Centre* today represent two of Hong Kong's most "intelligent" buildings. Other notable "intelligent" buildings include the *Lincoln House* (Taikoo Place), the *Oxford House* (Taikoo Place), the Hong

[7] IBS encompasses a wide variety of technologies, including energy management systems and building controls. Their function is to control, monitor and optimize building services (e.g. heating, ventilation, lighting, alarm systems and some electrical appliances). The four major elements of intelligent buildings are: building structure, building systems, building management and tenant services.

Kong Bank headquarters[8] and Hong Kong University's Kadoorie Biological Sciences *Building*.

Various hotels across the city have also integrated sophisticated energy-savings measures, and as a result, are recording energy savings of up to $1 million a year.

There is clear potential for Canadian companies to participate in the further development and modernization of IBS and technologies in Hong Kong, considering that the demand for such products is growing rapidly. However, in the short term, usage is likely to be adapted mostly in the construction of commercial and industrial buildings.

Opportunities

Hong Kong's growing construction sector offers key opportunities to Canadian exporters of building products as well as construction service providers. Canadian companies should, however, keep in mind that the Hong Kong building industry is resilient and flexible. With free trade, and as all building materials and equipment are imported, great attention is paid to prices. If the price of certain products is subject to adverse currency fluctuations and inflation in their country of origin, there tends to be a move toward more competitively priced goods. Successful companies are, therefore, those that can make price adjustments in response to competition and market conditions. In addition to cost, durability and appearance represent vital factors in the selection of building materials in Hong Kong.

Particular segments of the building products market where commercial potential is thought to exist in Hong Kong are listed below.

Prefabricated Building Components

Canadian companies will find tremendous opportunities in Hong Kong in the area of prefabricated building components.

Scarcity of land and high labour costs have long been problems for Hong Kong's building industry. Skyscraper-type buildings have therefore been the solution. Building products that can reduce the use of labour, save on construction time, and support high-rise structures are generally favoured by the market. For example, prefabricated structures, slipform systems, and metal formwork that help to save on labour usage and construction time are becoming popular.

[8] Aluminium sunshades were placed to modulate daylight penetration. A system of adjustable internal blinds was also installed in the external and backup walls. Intelligent floors, meanwhile, allow the tracing of movements in a building via links in a computer system. It serves as security monitor to detect people and as an indicator for an emergency management system (e.g. lights can be switched off automatically and HVAC adjusted according to data picked up from the floors).

Moreover, because Hong Kong architects are increasingly being urged by the ArchSD to use labour-saving structural elements, the demand for more factory-assembled and off-site fabricated building supplies is expected to increase. Some of these products include:

- standardized units for windows, doors, wall tiles;
- metal exterior cladding systems and curtain walls;
- prefabricated internal gypsum walls;
- pre-finished partitions; and
- exterior maintenance-free finishes.

Exterior Structural Components

Modern construction strives to provide an attractive, energy-efficient, weather-tight external envelope. In Hong Kong, the use of a curtain wall — particularly custom designed aluminum or stainless steel based curtain wall system capable to withstand severe wind load — remains one of the most popular options for commercial and office buildings.

Enhanced by architectural specification, the market for glass curtain walls has grown significantly since 1988. Besides the United States, the market is now dominated by regional suppliers such as China, Japan and Taiwan. The market for ordinary rectangular building glass is currently dominated by China. Canadian curtain wall suppliers have been successful in gaining a larger market share, due to both competitive pricing and good quality products.

The demand for all types of exterior structural components — particularly steel structures — is expected to continue growing in Hong Kong due to the increasing number of infrastructure developments and the construction of hotels and other commercial buildings. Quality is a key point, particularly where savings in maintenance costs can be made.

Windows and Doors

Windows

In Hong Kong, more than 90% of windows are aluminium-framed. Currently, most of the aluminium windows used in Hong Kong are imported from China. However, the anodizing procedure used to produce these aluminium frames causes environmental problems. Consequently, it is expected that Hong Kong will begin to use alternative materials — such as vinyl windows — due to possible difficulties in sourcing aluminium frames in mainland China, with the Chinese government likely to impose more stringent control on the anodizing industry.

Vinyl and PVC (polyvinyl chloride) windows are expected to gain an increasingly high market share in Hong Kong's construction market. It has been reported that the Housing Authority (HA) plans to use more vinyl windows in its housing projects, and is currently conducting tests on vinyl windows. This possible change in the use of window frame materials is due to an increased awareness of environmental issues, energy savings and efficiency in installing vinyl windows. Other perceived advantages include the fact that they are non-corrosive, they do not fade and they have better waterproofing properties — due largely to the method of installation — compared to aluminium windows. To install vinyl windows, typically only expansion foam is needed to seal the space between the window and the wall — a method that is both efficient and reliable. However, to install aluminium windows, waterproofing cement grout must be applied, and poor local workmanship often results in water leakage problems. This remains a big concern in Hong Kong since the city frequently encounters heavy typhoons and torrential rains during the summer season.

Moreover, due to Hong Kong's frequent typhoons, wind load bearing is an important parameter for windows (the wind load bearing requirement is 3.0 kpa in Hong Kong). To fulfill this requirement, most vinyl windows and some aluminium windows, have galvanized steel added to the frames to provide support.

While vinyl windows will soon dominate in residential construction, it is to be expected that steel and aluminium windows will continue to be applied in non-residential construction in the medium term. Wood windows account for the smallest market share or are in lowest demand.

Most of the aluminium windows imported into Hong Kong are manufactured in China and Taiwan. While 17 approved suppliers of aluminium windows appear on the Hong Kong Government Housing Authority's list, there are only three approved suppliers of vinyl windows recorded on the list.

Doors

There are two main categories of wooden doors used in Hong Kong: plywood doors and solid wood doors. Plywood doors can be further divided into two groups: standard (the most commonly used in Hong Kong) and veneered. Typically, the former type is manufactured in China with local materials. It is the least expensive of all doors on the market, and is the standard type of door supplied for the construction of new flats, in both public and private housing projects. The latter type — veneered plywood — is becoming increasingly popular. The surface of the door is either made of one particular veneer species specified by the client, or is a patterned veneer surface based on custom design.

Wooden doors in Hong Kong are mainly imported from China and Malaysia. Solid wood doors are available from both Southeast Asian and North American timber suppliers.

Solid wood doors that are manufactured in Indonesia, Malaysia and Singapore are gaining popularity in the Chinese market because of their competitive prices.

Canadian solid wood doors are perceived as being of good quality. However, the high shipping cost represents the main impediment to market entry. To cut down on costs, the trend has therefore been to import lumber (both hardwood and softwood) from North America into China to manufacture these doors locally.

Glass doors, with such special features as insulation, aesthetic value and soundproofing are becoming the preferred choice for modern offices, shops and malls.

Building Chemicals & Insulation Products

Many concrete structures in Hong Kong suffer from serious leaking problems (main areas are concrete roof and external wall). Several waterproofing materials, such as structural waterproofing sealants and waterproof coatings for application on the surface of concrete, are therefore currently in high demand. Lead-free paint is also in demand.

Various insulation products, such as insulation materials produced by non-polluting foam production process, high-performance windows, roofing materials and weather-resistant sidings, are also highly sought after in Hong Kong, further enticing Canadian firms to explore this market. It should be noted that asbestos-based products are prohibited in Hong Kong.

As the market for building chemicals and insulation products continues to grow because of effective distribution via local agents, it is important for Canadian manufacturers to effectively market their products.

Lumber and Value-added Wood Products

Due to the lack of domestic forest resources, Hong Kong depends entirely on imports for its lumber supply.

Lumber products are most widely used in the interior decoration and renovations subsectors. Residential and commercial interior design in Hong Kong is geared toward the use of lighter-coloured wood, such as beech, maple and oak, to create a warm and luminous effect. Walls, ceiling panelling, floors, partitions, stairs, doors, cabinets and shelves are manufactured from a wide variety of wood species.

According to the latest data, the total value of timber (HS 44) imported in Hong Kong in 1999 was $2.2 billion, representing an increase of 24% from $1.77 billion in 1995. The main categories of timber imports are as follows:

- rough, roughly squared and simply worked wood;

- veneers, plywood, particleboard; and
- value-added wood products (hardwood floorings, mouldings and veneers).

Among the large quantities of wood products imported every year, plywood and veneered plywood are the most widely used in the construction industry. Plywood is largely used as base panelling material for interior renovations such as shelving, cabinet doors and built-in furniture. Annual imports of plywood decreased from the peak of 214 million square metres in 1997 to 110 million square metres in 1999. The decrease was largely affected by the suspension of construction projects in 1998 due to the Asian financial crisis.

Mouldings and Skirtings

Mouldings and skirtings are widely used for interior decoration. While traditionally, these products were made of solid wood, polyurethane moulding is becoming increasingly popular, taking more than 50% of the market. From a local contractor's point of view, polyurethane moulding is lighter and is much easier to install and paint.

Some Canadian firms have been successful in supplying both wood and polyurethane products to Hong Kong. However, Indonesia, China and Malaysia remain Hong Kong's largest suppliers of wood mouldings and skirtings. Most of these products are manufactured in China out of timber imported from Southeast Asia and North America, including Canada.

While a steady growth in the use of these products is expected, Canadian companies should focus on supplying wood moulding products of excellent craftsmanship targeted at luxury residential or hotel projects.

Hardwood Flooring and Flooring Products

Wooden flooring, particularly hardwood flooring, is mostly used in residential properties, recreational centres, restaurants, department stores, club houses and discos. Despite the local humid climate that brings about contraction and expansion problems, wood is the flooring material of choice for many people in Hong Kong. Its perceived advantages include the fact that it has a cool surface but yet contributes to a warm ambience. Hardwood flooring is also considered to be hard-wearing.

Traditionally, teak wood was widely used because of its hardness and durability. However, during the past few years, tongue and groove hardwood flooring made of maple and beech has become more popular in modern homes. This trend can be attributed to the recent restrictions on the harvesting of tropical hardwoods in Southeast Asia and the preference for types of wood offering a lighter shade — Hong Kong residents tend to prefer lighter coloured wood because of its ability to make smaller areas appear larger.

In general, carpets dominate the office market. Vinyl flooring is mostly used in factories, low-cost housing units, and institutional buildings. Masonry flooring is used in a variety of applications, ranging from commercial buildings, hotels and shopping malls to kitchen and washroom floors in residential buildings. Raised flooring, originally used in computer rooms, is making in-roads into the IBS market where allowance for communication cables and power supplies is important.

There is also an increasingly wide selection of laminated flooring that has the benefit of being resistant to moisture and impact. Laminated flooring, however, is currently more commonly used for commercial retail projects, such as boutiques and restaurants, and is not as widely used in residential projects.

Hong Kong imports all of its hardwood flooring. Beech flooring, processed in China using European lumber is the market leader. Quality, uniformity and price competitiveness are listed as the key reasons for its popularity in Hong Kong. Other major suppliers of hardwood flooring include China, Indonesia, the U.S., Sweden, Taiwan, Brazil, France and Germany. Indonesia mainly supplies teak flooring, while France and Germany supply beech flooring.

The majority of the hardwood floors imported into Hong Kong is "unfinished" (i.e. kiln-dried, without acrylic paint and in strip or plank form, and edged with tongue and groove). Standard size is 2" to 4" in width, 2' to 6' in length and 12mm to 18mm in thickness. It should be noted that price is not the major determining factor for which species of hardwood flooring is selected. Sales channels are from importers to wholesalers to contractors and retailers.

Temporary Formwork

Formwork is one of the most challenging elements of work in the construction of high-rise buildings, mainly due to complicated spatial, loading or scheduling requirements. Although there are many advanced formwork systems available, traditional timber formwork is still widely used for building construction in Hong Kong due to its flexibility in meeting various layout requirements. Hardwood planks have been traditionally used, but these have now been replaced by plywood.

Moreover, due to environmental concerns, in 1993 the Hong Kong government laid down directives stipulating that substitutes to hardwood should be used for site hoardings. These substitutes include plastic, steel and softwood. The move by the government should not be considered as a ban against using hardwood but, rather, as an encouragement to use other reusable or environmentally friendly materials. It should be noted that the private sector is not obliged to follow suit. Some building contractors are looking elsewhere for substitutes to plywood. There is a potential market for companies offering price-competitive panel boards suitable for formwork.

"Table form" formwork made of aluminium sections is growing in popularity, especially in the construction of commercial/office buildings making use of flat-slab design.

Steel props with adjustable lengths have also recently been introduced in the Hong Kong market. They have many advantages over timber, including strength, stability and durability. However, formworks made of steel sheets require a longer lead time to prepare, and are not as flexible as those made of timber. Accordingly, more contractors will continue to use plywood instead of steel, particularly for structures of a non-standard design.

Security Products

The market for security products is growing rapidly in Hong Kong, especially with the increasing crime rate and the growing demand for high-quality commercial buildings. Access control system, CCTV, fire alarm, barrier system, intrusion detector and vaults & safes all form part of the demand for security products in Hong Kong. The demand for intelligent buildings also call for security services within all the "wired" services which include lighting, power, fire detection and automated building management systems. Product distribution within the market is important and China, Japan, UK suppliers have made headway in this area.

Although price competitiveness is important in the area of security products, there is an increasing trend toward quality and service. If these can be obtained, then demand for more expensive products is expected to follow.

Energy-efficient Building Products & Intelligent Building Systems

The Hong Kong market for "green" or energy efficiency materials and services for buildings is projected to grow at an average rate of 6% annually over the next five years. Canadian companies that can offer innovative solutions to a commercial building's lighting, management and climate-control needs, and that also offer a favourable return on investment will find a ready market for their products. The following products have been identified as having good sales potential in Hong Kong:

HVAC Systems

- high-efficiency chilled-water plants or small unit chiller plants (chiller plants in Hong Kong are currently oversized and account for a large portion of energy consumption in commercial buildings);
- heat exchangers and air-handling units;
- desiccant dehumidifiers;
- airconditioning system which can be individually switched on and off;
- ozone-free coolant for air-conditioning systems;
- A/C parts, such as pumps, motors, capacitors;

- water-cooled[9] air-conditioning systems[10] for commercial and industrial buildings; and
- underfloor air-conditioning system with VAV air handling units and fan power terminal units under direct digital control.

In 1998, Hong Kong imported $3.4 billion (US$2.3 billion) in HVAC equipment, out of which approximately 70% was re-exported, with China alone absorbing 52%. There is substantial potential for Canadian companies to supply these products, as strong growth is expected during the next few years.

Lighting Systems

- highly energy-efficient lighting lamps and fixtures, electronic dimmable ballast with digital control, and "smart" controls for commercial facilities;
- computer controlled fibre optic lighting system for external building decoration;
- high frequency electronic ballast lighting for building interior; and
- glare-free and energy efficient lighting.

Building Materials

- superior insulation products;
- glazing system (large size laminated, reflective or low 'e' glass panels to allow natural light transmission and block out UV light eco-efficient window glazing products); and
- adhesives and coatings (mainly used in construction of new commercial buildings and public facilities).

Intelligent Building Management Systems

The Hong Kong market for intelligent building management systems is probably the most mature of the energy-efficient sectors. Hong Kong property managers are eager to learn the best-management practices to improve the overall energy performance of a building.

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[9] The use of a water-cooled system was recently endorsed by Hong Kong's Commission on Audit in its latest report as more energy efficient than the air-cooled system. The Hong Kong government is therefore considering the use of energy-efficient water-cooled air-conditioning systems to replace the conventional air-cooled systems. The government's decision to allow water-cooled systems will also boost demand for air-conditioning parts used in water-cooled systems.

[10] Typically, Hong Kong buildings are designed using a rule of thumb that 1 tonne of cooled air is needed for every 20-25 square meter of floor space.

Canadian vendors of systems and controls, as well as specialized consultants, should therefore find good sales opportunities in Hong Kong, particularly in the area of energy-efficient equipment and controls for commercial and industrial facilities.

Products and technology particularly in demand include the following:

- control systems and monitors (particularly control systems for air-conditioned and chilled-water circuits, lighting control systems incorporating programmable controllers, photocell, presence detection, remote infrared control; combined electronic ballasts and emergency modules for emergency lighting and exit signs; high-pressure sodium lamp control by electronic control gear; and new energy management control systems);

- electrical installations (e.g. power quality improvement equipment, power factor correction equipment, new digital meters for power and energy measurement, proprietary energy-saving equipment and systems, vacancy sensors and sensors for CO and CO_2; soft starters);

- security system (integrated system comprised of computerised control CCTV system, proximity card access management system, parking management system and wireless watchman tour system);

- active noise control technologies (conventional passive methods such as silencers and absorptive lining tend to dissipate energy);

- fire-protection products and performance-based engineered smoke control solutions (e.g. automatic mechanical ventilators designed to respond early in a fire's development by removing hot gases from predesigned and determined-size reservoirs, at a high level; smoke curtains or channelling screens); and

- elevators and escalators — the ongoing construction boom in high-rise structures is continually driving demand for faster elevator transport with higher loading capacity. At the same time, customers are looking for more efficient system technology that delivers optimum performance without compromising safety and comfort.

- raised floor system (150 mm raised floors for underfloor cables, pipes & ducts required for electricity, lighting, telecom, water and air conditioning)

Canadian companies will also find an increasing demand for energy-performance contracting services, particularly building services engineers capable of identifying energy- and resource-efficient solutions, as well as environmentally sensitive design issues.

Compatibility of components, reliability, and system flexibility are areas in which a concentration of effort would bring good returns for Canadian exports. "User friendliness" would also give potential users greater confidence in these systems, and make them more willing to install them. Moreover, wider consumer information, improved professional training for installers, and programs to promote the technology are other critical success factors when selling IBS technologies in Hong Kong.

Canadian companies should be aware that compatibility should be addressed as a major issue in this market. Imported components of IBS are not always fully compatible with the appliances and systems customers have already installed.

Architectural and Construction Services

Hong Kong is planning substantial infrastructure projects, including improved cross-border links, railway systems, tourist attractions, environmental services and new container terminals. Accompanying these activities are the ever-present housing demands. To support these projects, Hong Kong continues to need the service of consultants, building professionals, engineers and construction companies.

While local architectural firms will continue to dominate, particularly in the residential market, Canadian firms can find a profitable niche in prestigious projects.
The following lists some of the best prospects in Hong Kong for Canadian architectural firms and construction service providers over the next five years:

- high-end commercial projects (shopping malls);
- grade A office buildings;
- five-star hotels;
- high and medium-high end residential projects;
- institutional projects (hospitals, universities, schools);
- environmental and leisure-related projects (public toilets, tourist bureaus, information centres, wetland reserve areas);
- infrastructure-related projects (new rail stations, refurbishment of old stations); and
- innovative planning for densely populated urban areas, based on sustainable development principles.

Actual and Planned Projects

Canadian building products and construction service provider firms stand to benefit from the government's continuing massive infrastructure building program.

The following table illustrates a few examples of major construction projects planned in Hong Kong, which may present some commercial opportunities for Canadian firms. It is

expected that the demand for building products relating to these projects alone will be substantial over the coming years.

Table 7. Major Construction Projects Planned in Hong Kong

Project	Project Status	Description [Estimated Cost]	Expected Completion Date
Hong Kong Disneyland Phase One Penny's Bay, Lantau Island, Hong Kong (Website: www.info.gov.hk/disneyland/)	Design	Penny's Bay, Lantau Island, Hong Kong comprises: • Disney Theme Park • a 1400-room resort hotel complex and a retail dining and entertainment centre [HK$14.1 billion (C$2.7 billion)]	2005
Cyberport Telegraph Bay, Hong Kong Total Area: 26 hectares (390,000 m^2) - Phase I: 29 000 m^2 office area - Phase II: 29 200 m^2 office area - Phase III: 40 000 m^2 office area - Houses & apartments gross area of 375 000 m^2 (Website: www.cyberport.com.hk and www.info.gov.hk/itbb/english/cyberport)	Design/ Construction	The Cyberport comprises: • intelligent offices • conference and shared IT/IS facilities • a Cybermall with exhibition, retail, educational and entertainment facilities • a hotel • serviced apartments • residential houses/apartments [HK$13 billion (C$2.5 billion)]	Cyberport itself: 2001-2003 Houses & Apartments: 2004-2007
Hong Kong Science Park Pak Shek Kok, Tai Po, N.T., Hong Kong Total Area: 22 hectares (330 000 m^2) Phase I: 8 hectares (120 000 m^2) Phase II: 7 hectares (105 000 m^2) Phase III: 7 hectares (105 000 m^2) (Website: www.hksciencepark.com)	Design/ Construction	Phase 1A comprises: • a six-storey multi-purpose block with 29 000 m^2 of floor area • a nine-storey car park with 20 000 m^2 of floor area • a seawater pumping station • underground service tunnels and associated external works [Phase I: HK$3.30 billion (C$64 million)]	November 2001
Two International Finance Centre 1 Harbour View St., Central, Hong Kong	Construction	• An 88-storey office tower to contain 181 301 m^2 of floor area, two hotel towers and a large shopping mall [Undisclosed]	2003
The Metropolis Hung Hom, Kowloon, Hong Kong	Construction	A complex development project to include: • a 15-storey office tower • two 17-storey apartment towers • a 15-storey hotel • a 3-storey retail and 2-storey car park podium [Undisclosed]	Late 2001

Project	Project Status	Description [Estimated Cost]	Expected Completion Date
The MTR Landmark Tower MTR Kowloon Station Kowloon, Hong Kong	Design	A 102-storey of retail/office and hotel tower standing at a height of 580 m, gross floor area 152 000 m^2 [HK$6 billion (C$1.15 billion)]	2006
Ma Wan Theme Park Ma Wan, N.T., Hong Kong	Design	The project includes: • 5000 residential units on 120 000 m^2 • a 12 thematic zone theme park occupying a site of 185 000 m^2 [HK$1.04 billion (C$200 mn)]	2003
Ocean Park Hong Kong Aberdeen, Hong Kong	Design	Redevelopment of water park will comprise: • 4500 seat venue for the park's marine mammal presentation • shopping and dining centre [HK$520 million (C$100 million)]	2003
Pok Oi Hospital Redevelopment Au Tau, Yuen Long, N.T. Hong Kong	Design	The project will include demolition of existing buildings and construction of new medical towers on a two-hectare site. There will be 65 000 m^2 of floor space. Construction will involve two phases. [Undisclosed]	December 2006
Police Headquarters Redevelopment Arsenal St. Wanchai, Hong Kong	Design	The project includes: a 43-storey complex • a four-storey basement • catering areas • 36 lifts • an armoury • a barber shop • an auditorium [HK$3.23 billion (C$62 million)]	January 2004
Queen Street Residential Development Queen St. Sheung Wan, Hong Kong	Construction	The development will be divided into two sites (A & B). It includes: • 1148 residential units to contain 60 570 m^2 of floor area • a kindergarten and other community facilities to contain 5333 m^2 of floor area • shopping area to contain 368 m^2 of floor area [Undisclosed]	End of 2002

Project	Project Status	Description [Estimated Cost]	Expected Completion Date
Victoria Park Improvement Project Causeway Bay, Hong Kong	Construction	The improvement work includes: • upgrading existing recreational facilities • construction of toilets and changing rooms • improving building services installation and drainage • providing additional planting [HK$205.30 mn (C$39.50 mn)]	December 2002
Siu Sai Wan Residental Development Chai Wan, Hong Kong	Construction	A total of eight 53- and 43- storey residential towers. Residential space measures 220 000 m^2 and non-residential space measures 44 000 m^2 [Undisclosed]	December 2001
Ocean Shores Phase 3 Residential Development Tseung Kwan O Kowloon, Hong Kong	Construction	A total of six 48-storey residential towers to contain 150 000 m^2 of floor space [HK$135 mn (C$26 mn)]	December 2001
Tseung Kwan O Extension Phase I	Construction	Comprises Area 86 Depot and five new stations: • Yau Tong • Tiu Keng Leng • Tseung Kwan O • Hang Hau • Po Lam [HK$21 billion (C$4.1 billion)]	2002
MTR Olympic Station: Residential Development Kowloon, Hong Kong	Construction	A total of six residential towers ranging from 32 to 40 storeys. There will be a total of 100 000 m^2 of floor space, providing 1508 apartment units and 282 parking spaces [Undisclosed]	2003
MTR Tung Chung Station: Site 3 Tung Chung, Lantau Island, Hong Kong		A total of five, 46-storey residential towers with office and retail space on a one-level basement, totalling 141 000 m^2 of residential space and 8000 m^2 of non-residential space [Undisclosed]	Late 2002

Project	Project Status	Description [Estimated Cost]	Expected Completion Date
West Rail, Phase I	Construction	A 30.5 km domestic passenger railway linking Sham Shui Po in West Kowloon with Tuen Mun in the northwest New Territories, comprising: • nine stations • a depot • a headquarters building accommodating a central operations control centre [HK$64 billion (C$12.1 billion)]	2003
KCRC East Rail Extension	Design	Comprises: • three extension lines: 11.4 km Ma On Shan Rail with a depot at Tai Wai and nine stations • 1-km Tsimshatsui Extension • 7.4 km Sheung Shui to Lok Ma Chau Spur Line [HK$26.7 billion) (C$5.2 billion)]	2004

Source: Consulate General of Canada, Hong Kong, August 2000.

COMPETITIVE ENVIRONMENT

Local Capabilities

Hong Kong is famous for its skyscrapers. Local architectural firms and construction firms have built up a reputation in the rapid construction of concrete high-rise buildings. Over 90% of the residential and commercial buildings are designed by local architects and built by local construction companies. Many of them have made headway to the mainland China market.

Despite the lack of building materials manufacturing industry, the building materials trade in Hong Kong is very sophisticated. A wide variety of imported materials of different quality is available through local agents, distributors and importers. Some overseas manufacturers, due to their long presence here, have set up showroom and sales office in Hong Kong. Europe and North America are the sources for higher end products, while Mainland China and other Asian countries are for medium to low end products.

Contractors

Hong Kong's construction industry is characterized by a few large local contractors — that are construction companies — a high level of subcontracting, the presence of

many overseas contractors, and a substantial number of companies that are both developers and contractors.

Hong Kong contractors are experienced and highly skilled in building works. Because of the growing size and complexity of the projects, the current industry trend is to award large and complex building contracts as a single package to multidisciplinary contractors/construction companies.

Price is especially relevant if a manufacturer is seeking to enter the Hong Kong market via a contractor. As a general rule, contractors only recommend products when they can be obtained at lower prices, or in certain cases, when a product is technically more advanced. There is an increased demand for labour-saving materials due to high labour cost prevailing in the Hong Kong construction industry. If appropriate, it is essential to stress this factor when marketing a product.

Major construction companies or main contractors include: Chevalier International Holdings Ltd., Dragages et Travaux Publics (HK) Ltd., Gammon Construction Ltd., Hip Hing Construction Co. Ltd., Hong Kong Construction, Paul Y. - ITC Construction Holdings Ltd. and Shui On Group Ltd. (**See Appendix C for contact details**).

Developers

There are many well-established developers in Hong Kong. Typically, Hong Kong developers have a diversified business, which includes property development and investment, infrastructure development, building and foundation construction property management and hotel investment.

Key local developers in Hong Kong include Cheung Kong (Holdings) Ltd., Hang Lung Development Co. Ltd., Henderson Land Development Co. Ltd., Hutchison Whampoa Ltd., New World Development Co. Ltd., Sino Group, Sun Hung Kai Properties Ltd. and Swire Properties Ltd. (**See Appendix D for contact details**).

Major property management companies are usually affiliated with the developers to provide full equipment maintenance services to their buildings. Active players include Cheung Kong Property Management Ltd. (Cheung Kong Holdings' affiliate), Hang Lung Real Estate Agency Ltd. (Hang Lung Development's affiliate), Hang Yik Property Management Ltd. (Henderson Land's affiliate), Kai Shing Management Services Ltd. (Sun Hung Kai's affiliate), and Swire Properties Management Ltd. (Swire Properties's affiliate).

Construction and Architectural Services

Hong Kong companies have built up a reputation in the rapid construction of quality high-rise apartment blocks and office towers. Specialized construction techniques, such

as reclamation and design-and-build methods, have made Hong Kong a regional leader.

There are about 160 local architectural firms in Hong Kong, among which 10 have more than 100 employees. The majority are medium-sized companies with 50 to 100 employees. There are also a number of small architectural firms with less than 50 employees.

Most of the architects are members of the Hong Kong Institute of Architects, and some are qualified by the government to be an "authorized person" (AP), which entitles the holder to submit building plans to the building department. **(See Appendix B for a list of Major Architects in Hong Kong)**.

Table 8. Construction Service Companies in Hong Kong, 1998

	No. of establishments	Employment
Building and Civil Engineering	19404	155906
Architectural, surveying and project engineering	1297	19119
Architectural design	385	4477
Real estate surveying, valuation and consultancy	578	4553
Structural engineering	24	279
Building services engineering	65	1323
Civil and geotechnical engineering	76	2555
Architectural design and structural engineering	49	863
Combination of preceding services	147	5068

Source: *Building and Construction* , **http://www.tdctrade.com/main/si/spcons.htm** , July 3, 2000.

Local firms undertake the majority of the residential, commercial, institutional and industrial projects. For residential projects, local firms capture more than 90% of the market. Local architects are extremely difficult to compete with because of their expertise, competitive prices, knowledge of the market, understanding of the Chinese culture and familiarity with local building codes.

For civil engineering projects, the sector is dominated by local companies with more than 20 years of experience in Hong Kong, which are therefore quite competitive.

International Competition

Hong Kong relies heavily on imports of building products and construction services because local production is too small to meet the demand. Canadian manufacturers of

building materials face intense competition from a host of foreign companies, mainly from Australia, China, Japan, Italy, Germany, Spain and the United Kingdom. Some of the main areas of competition are outlined below.

- In the area of traditional sources of steel structures, the U.K., Japan and the U.S. continue to further consolidate their positions as leading suppliers, while regional producers in China, Taiwan and Korea are winning major contracts by offering price-competitive products.

- Germany and the U.S. represent the two main countries supplying aluminium structures to Hong Kong. However, Germany's market share is gradually eroding in favour of regional suppliers in China and Singapore.

- While building chemicals will likely increase in popularity in Hong Kong's construction industry, strong competition from U.S., Taiwanese and Japanese suppliers will likely continue to capture the majority of future sales. Factors such as the advantages resulting from product quality, knowledge of the local market, and frequent on-site visits have contributed to their success. The market for waterproofing building materials continues to be dominated by U.K.-based companies, mainly as a result of successful marketing.

- Hong Kong is one of the largest user of plywood in Asia. Malaysia, Indonesia, and China represent the top three suppliers, with a market share of 29%, 28% and 8% respectively. The increasing environmental concern dictates that Southeast Asian plywood be replaced by either softwood or reusable steel panel for hoarding and fencing at construction site.

- Hong Kong's demand for insulating materials is largely met by U.S., Japanese and Taiwanese suppliers. These market sources also dominate the market for insulating fibreboard.

- Canadian manufacturers continue to be relatively successful in the market for tufted man-made carpets. Several other major foreign competitors from the U.S. and from neighbouring producers such as Taiwan, Japan, China and Singapore are also well-established in Hong Kong. They tend to compete on prices and service reliability.

- The market for ceramic sanitary ware is currently dominated by regional producers from Thailand and Taiwan, which compete successfully with lower prices. Product specifications for U.S. and British products are still popular, particularly for commercial buildings and hotels. Companies such as Kohler, Jacob Delafon, American Standard and Toto are gaining a large market share in supplying ceramic sanitary ware for residential projects in Hong Kong.

- Several major manufacturers of elevators and escalators already enjoy a significant presence in the Hong Kong marketplace. Some of the most prominent players include Otis (U.S.), Schneider (Germany), Dong Yang (South Korea), and Toshiba and Hitachi (Japan).

- In the area of energy-efficient and engineering products — particularly HVAC components and control systems — U.S., European and Korean products dominate the market segment. Products from the U.S. and the U.K. are extremely competitive in HVAC systems (particularly water chillers, filtering machines and ventilation systems). Architects and contractors of projects have become very familiar with the reliability of these products. There is also increasingly strong competition from exporters in Japan and Taiwan, which generally offer price-competitive products. China continues to dominate the market for heating equipment.

- Because there is very little local manufacturing of air-conditioning units and components, well over 90% of those used in Hong Kong are imported. Producers from China (which produces mainly low-tech products), Japan, Singapore, Malaysia, Taiwan and Thailand have captured a large portion of this market. Suppliers from these countries have a successful history in Hong Kong due to service reliability and price competitiveness. Japanese brands such as Hitachi, Toshiba, National, Daikin, Sanyo, Mitsubishi and Fujitsu-General dominate the household air-conditioning market. Japanese suppliers tend to give excellent technical and after-sales service and support to local clients. U.S. brands such as Carrier, Trade, York and McQuay dominate the commercial/industrial market.

- For control systems, key suppliers include Honeywell, Johnson Controls, Motorola, Automation Products and AP Corporation — all from the United States. Other major foreign competitors include Siemens (Germany), Phillips (The Netherlands), and L&G (South Korea). Price, delivery and service are always critical in decision making.

- There are a number of important foreign manufacturers that produce IBS technologies and/or components. European suppliers from Germany, the U.K., Finland and Austria have a particularly strong presence in the Hong Kong market. For example, Austria's ATS, a system that provides integrated alarm and monitoring systems, is making fast inroads into high-profile building projects in the Hong Kong market, having been installed in Hong Kong's Airport Railway and in the Yan Chai Hospital.

Table 9. Hong Kong Imports of Energy-efficient Building Products* ($ millions)

Country	1998	1999	2000*
China	1027	1022	1071
Japan	625	403	470
U.S.	478	407	455
Germany	101	76	88
United Kingdom	86	71	81
France	79	49	66
Others	209	189	257
Total Imports	2605	2217	2488

* = estimated
* statistics include:
HS 8414 - Air or vac pumps, compressor, and fans, etc.
HS 8415 - Air conditioning machines (temperature and humidity change), etc.
HS 9032 - Automatic regulating or control instrument, etc.
HS 8512 - Electrical lighting, tubes, lamps, etc.
HS 8428 - Pneumatic escalators, lifts, etc.

Source: Hong Kong Statistical and Census Department, 1999 .

- Major types of services that are currently being imported in Hong Kong include specialised engineering consulting, which are mostly at sub contracting level. In most cases, pre-registration with relevant government department maybe required for public works.

- In the area of architectural services, it is sometimes difficult to classify an architectural firm as "local" or "foreign" since many foreign firms have a long presence in Hong Kong. It is, however, estimated that the ratio of local to "foreign" architectural firms is about 85% to 15%. Among these "foreign" companies, a large number were originally U.K.-based. Some of the well-known names include Foster & Partners HK, Terri Farell, Percy Thomas Partnership, Spence Robinson, Leigh & Orange, RMJM — all of the U.K. — and Denton Corker Marshall (Australia). These companies have worked on a number of landmark projects in Hong Kong. For example, Foster & Partners was the architect for the futuristic Hong Kong Bank Headquarters, and was the designer for Hong Kong's new Chek Lap Kok airport. Percy Thomas has done a number of hospital projects, and Leigh & Orange specializes in school projects. In general, U.K. firms have an established niche in the institutional sector.

Canadian Position

Hong Kong's buoyant construction industry offers tremendous opportunities for Canadian building product manufacturers and construction service providers. While several Canadian companies are paying this market the attention it deserves, very few Canadian companies are actively pursuing the opportunities here. Thus, Canada is still not perceived as a major supplier to the building industry in Hong Kong.

Canadian companies' major weaknesses in the Hong Kong market include:

- lack of commitment to the market;
- no continuity of presence/short-term approach to doing business in Hong Kong; and
- after-sales service that is considered poor because no commitment is made to the market.

Moreover, while several Canadian building products (particularly value-added wood products) have been recognized as being of superior quality, they tend to be much more expensive when compared with products manufactured and supplied from other regions. However, it is thought that Canadian quality products that are slightly higher in price by 10% to 20% would normally still be accepted.

With local Asian producers capturing more of the lower-end building products market, Canadian companies have geared themselves toward greater specialization in high-quality and value-added building products. Particularly strong Canadian building products in Hong Kong include engineering equipment and wood and wood-based products (in 1999, wood and wood products represented one of Canada's top 20 exports to Hong Kong).

Energy-efficient and environmentally friendly building materials from Canada — including superior insulation, high-performance windows, curtain walls, glazing system as well as alarm systems — are also highly sought after by Hong Kong residents, further enticing Canadian firms to explore this market. Fulton Windows (Toronto, ON), a manufacturer of high-quality thermal window products and energy-efficient curtain wall systems, represents an example of a Canadian company that has successfully established a presence in the Hong Kong market. In 1997, the company supplied the complete curtain wall and skylight system for the famous Hong Kong Convention Centre.

Among other Canadian companies that have established a presence in the Hong Kong market are: SW Fleming of British Columbia (fire rated doors) and AFG Canada of Ontario (glazing system).

Table 10 illustrates selected Canadian construction and building material exports to Hong Kong from 1996 to 1999. So far, Canada has been particularly successful in exporting aluminium door and window frames, automatic regulating and control instruments, and maple/oak/beech flooring to Hong Kong.

Canada ranks, along with Indonesia and China, among the top three suppliers of hardwood flooring to Hong Kong. Moreover, during the last four years (1996-1999), Canada remained Hong Kong's leading exporter of parquet panels. Shipments to Hong Kong grew significantly during this period, reaching a value of more than $22 million.

It is expected that Canadian exports of building materials and technologies will continue to grow, but the most successful exporters will be those that can provide specialized, high-quality and affordable building components that adapt to changing market needs.

Table 10. Canadian Exports of Selected Building Products to Hong Kong, 1996-1999 ($)

HS Code	Building Product	1996	1997	1998	1999
HS 4418.30	Parquet panels	5,068,761	11,007,971	3,177,620	2,859,187
HS 7610.10	Aluminium doors, windows and their frames and thresholds for doors	2,993,238	1,293,883	604,669	263,429
HS 4418.20	Doors, door frames and thresholds – wood	535,539	1,390,133	305,488	564,228
HS 3925.20	Door, windows, their frames and thresholds for doors – plastic	11,634	0	0	95,335
HS7308.30	Doors, windows and their frames and thresholds for doors – iron or steel	423,249	327,271	651,758	588,222
HS 4418.90	Laminated beams/arches, panels and prefabricated partitions – wood	496,581	526,838	745,979	234,024
HS 3918.10	Floor, wall and ceiling covering – polymers of vinyl chloride	259,132	128,267	169,111	133
HS 6806.90	Articles of heat insulating or sound absorbing mineral materials – excluding asbestos-cement	25,737	150,938	0	0
HS 8414	Air or vacuum pumps; compressors and fans	451,982	481,423	1,367,011	780,421

HS Code	Building Product	1996	1997	1998	1999
HS 8415	Air-conditioning machines (temperature and humidity change), etc.	1,490,978	2,648,928	5,081,713	1,852,924
HS 9032	Automatic regulating or control instruments, etc.	1,548,093	2,118,369	2,487,270	2,622,528
HS 8512	Electric lighting, tubes, lamps, etc.	48,124	12,876	33,630	73,440
includes[1]	Prefabricated buildings	19,773,174	8,311,094	3,508,351	3,033,838
includes[2]	Paint products	7,211,800	7,606,723	6,052,456	6,245,826
HS 57[3]	Carpets	1,979,274	2,356,405	1,651,879	1,124,105
HS 44[4]	Wood	50,914,657	66,749,246	52,166,637	60,469,414

[1]HS 681091 Prefabricated structural components for buildings
HS 730890 Structures; plates and shapes for structures (iron/steel)
HS 761090 Aluminium structures, -parts used in structures
HS 940600 Prefabricated buildings (industrialized buildings)

[2] HS 320810 paint/varnish; polymer; non-aqueous
HS 320910 paint/varnish; polymer; aqueous
HS 321000 other paint/varnish
HS 321290 pigment for paint; dyes
HS 321410 mastics and painter's fillings

[3] HS 5703 Other tufted
HS 5702 Woven, not tufted, etc.
HS 5701 Knotted
HS 5705 Carpet +O TFC, M-UP/IN
HS 5705 Felt, not tufted, etc.

[4] HS 4403 Wood in the rough
HS 4404 Hoopwood/piles/pickets/stakes
HS 4407 Wood sawn/chipped lengthwise
HS 4408 Sheets for plywood (under 6 mm)
HS 4409 Wood continuously shaped
HS 4410 Particleboard of wood/other ligneous mat
HS 4411 Fibreboard of wood/other ligneous mat
HS 4412 Laminated wood

Source: TradeStat, 2000.

Construction Services

Canadian construction service providers are regularly criticized by locals for not taking a long-term approach to the overseas market. For example, few Canadian architects maintain an office in Hong Kong, which adds to this perception.

It is difficult to assess market share among Canadian construction services firms currently operating in Hong Kong. However, the majority of companies that have successfully entered the market have operated mainly through joint-venture operations.

Competitive Advantage through Canadian Government Policies and Initiatives

Export Development Corporation

Export Development Corporation (EDC) is Canada's official export credit agency, facilitating Canadian trade with over 200 world markets. EDC is a unique financial institution offering some of the most sophisticated trade finance solutions and skills. Since 1995, EDC has helped Canadian exporters do over CND$755 million worth of business in Hong Kong. EDC's financial services include credit insurance, performance security and contract bonding, political risk insurance, direct buyer loans and lines of credit. More specialized financial services include highly structured limited recourse financing options and long-term leasing arrangements.

Canadian Commercial Corporation

The Canadian Commercial Corporation (CCC) gives Canadian companies access to financing and better payment terms under the Progress Payment Program (PPP). The PPP concept was developed as a partnership between major Canadian financial institutions and the CCC. It enables the exporter's bank to open a project line of credit for the exporter's benefit, based on CCC approval of the project and the exporter's ability to perform. The CCC will also act as a prime contractor on behalf of Canadian small and medium-sized enterprises, giving those businesses increased credibility and competitive advantage.

Program for Export Market Development

The Program for Export Market Development (PEMD) helps Canadian companies enter new markets by sharing the costs of activities that companies normally could not or would not undertake alone, thereby reducing risks involved in entering a foreign market. Eligible costs and activities include market visits, trade fairs, incoming buyers, product testing for market certification, legal fees for international marketing agreements, transportation costs of offshore company trainees, product demonstration costs, promotional materials, and other costs necessary to execute a market development plan. Activity costs are shared on a pre-approved, 50/50 basis.

The PEMD refundable contribution ranges from $5,000 to a maximum of $50,000. Preference is given to companies with fewer than 100 employees for a firm in the manufacturing sector and 50 in the service industry, or with annual sales between $250,000 and $10 million. Other components of the program include international bid preparation (Capital Project Bidding) and, for trade associations, developing

international marketing activities for their membership. For additional information visit http://www.infoexport.gc.ca/pemd-e.asp or call 1-888-811-1119.

WIN Exports

WIN Exports, a database of Canadian exporters and their capabilities, is used by trade commissioners around the world and by Team Canada Inc partners in Canada to match Canadian suppliers with foreign business leads, and to share information on trade events. To register your company in WIN Exports or for more information, visit http://www.infoexport.gc.ca/winexports/menu-e.asp or call 1-888-811-1119.

PRIVATE-SECTOR CUSTOMERS

Local buyers of building materials, including energy-efficient building products and intelligent building control systems are generally property developers and its construction affiliated subsidiaries, main contractors and sub-contractors, and importers and trading firms. Other potential buyers are property management firms that provide management and maintenance services to building management.

Contractors in Hong Kong are classified into large and small contractors. Large contractors tend to bid for large construction projects as main contractors, and they serve both the public and private sector, such as hospitals, universities, housing estates and commercial buildings. There are about 400 small contractors that normally work under main contractors as sub-contractors. Many end users also prefer to buy semi-finished material and finish it themselves, to reduce costs and to get a better product fit.

Clients for architectural services are mainly private developers, contractors and other consultants looking to team up with a partner.

Price and quality are the two main concerns for clients in choosing an architect. Nevertheless, for prestigious projects, quality usually dominates (e.g. grade A offices, high-end shopping malls and five-star hotel projects). For other projects, although quality is important, the clients' biggest concern is price. In those cases, developers rarely call overseas consultants, who are often more costly and take a longer time to develop a project.

To seriously compete in Hong Kong, it is critical that Canadian architectural firms maintain a local presence. For those Canadian firms that do not plan to set up a branch office in Hong Kong, a cost-effective approach to entering the market is to set up a liaison office in Hong Kong, and to partner with local or foreign architectural firms. Canadian firms can be responsible for conceptual and schematic designs, while local architects, who are familiar with the local building codes, can be responsible for the detailed design, submission of building plans and project administration.

PUBLIC-SECTOR CUSTOMERS

The use of high-value building products within the public sector falls within two main groups — public housing construction and other government buildings (including government joint-venture building projects). Although their building procedures are similar, control of the two groups is separate (i.e. through the Hong Kong Housing Authority ("HKHA") and the Architectural Services Department ("ArchSD") respectively).

The scope of government building projects is extremely wide. This is illustrated by the range of activities carried out by the ArchSD, namely:

- the provision of architectural and associated services to all government departments, such as quantity surveying;
- the provision of professional and technical advice to the government on building matters;
- the supervision of building projects funded by government subvention (e.g. educational, medical, recreational and cultural building projects);
- the supervision of joint-venture developments between government and the private sector; and
- the maintenance and management of virtually all public buildings in Hong Kong, with the exception of public housing.

Government Organizations

Hong Kong Government Supplies Department

The Hong Kong Government Supplies Department (GSD) is responsible for the procurement of all goods and services required by the government. The GSD normally purchases by open tender, with decisions based on compliance with tender specifications, competitive prices, back-up service and delivery. The GSD gives no preference to any particular source of supply from any country or organization.

Invitations to open tender are published in the *Government of Hong Kong Special Administrative Region Gazette* and in selected Hong Kong newspapers. Tender notices are also published on the GSD's Web site at http://www.info.gov.hk/gsd. Tenders normally have a 90-day validity period unless otherwise indicated. For information about a subscription to the *Gazette*, Canadian companies should contact the Information Services Department (**See Key Contacts and Support Services**).

Potential suppliers for building product to the government, including services and building technologies, must register on the ArchSD's approved contractors or products lists (**See Key Contacts and Support Services**).

Other potential clients in the public sector are the Hong Kong Housing Authority, the Housing Society, the Hong Kong Hospital Authority and the Civil Engineering Department.

Architectural Services Department

Hong Kong's ArchSD is responsible for the design, procurement and maintenance of all government building projects (e.g. public schools, sports centres, libraries), with the exception of public housing. Its work includes providing professional advice, building design, awarding contracts, supervising construction and building management. The department has more than 2000 staff, and has 650 building projects ongoing at any given time. In 1999, 112 construction projects were completed, totalling $2.1 billion ($HK10.8 billion).

Through its Quality Management System, the ArchSD is committed to improving the environment by promoting the design, procurement and maintenance of community facilities in an environmentally responsible manner, such as by reducing energy consumption and the use of building materials that are harmful to the environment. The ArchSD maintains an approved contractors and products lists. ArchSD is obliged to specify products and engage contractors approved in these lists.

Hong Kong Housing Authority

The HA is an independent, statutory body established in 1973, which responsible for carrying out Hong Kong's public housing programs. Its prime objective is to provide, through its Housing Department, affordable housing to the needy, in-line with the government's Long-term Housing Strategy. The Housing Department is the HA's executive arm. Architects are in-house and the department has an approved contractors list. Contractors on this list are obliged to select building products from the department's approved products list.

The Hong Kong HA is considered to be the world's largest developer of social housing. Autonomous and self funding, it provides housing for half of Hong Kong's population, manages public rental housing estates, commercial facilities and other community and ancillary facilities. On average, 35 000 new flats are completed by the HA each year. Its annual turnover exceeds $11 billion (HK$59 billion). The Hong Kong government supplies free land to the HA for all planned development.

Foreign companies interested in introducing potential products for use by the HKHA must submit a letter of introduction, including a company profile, a list of products and

services and the associated advantages. This information should be accompanied by relevant project references and brochures. The contact details are as follows:

Senior Professional/Specification Team
Hong Kong Housing Department
B1 Housing Authority Headquarter
33 Fat Kwong Street
Homantin, Kowloon, Hong Kong
Tel: (852) 2761-6786
Fax: (852) 2330-5871
Internet: www.info.gov.hk/hd/index.htm

A successful company is then placed on the Housing Department's approved product list that generally contains seven suppliers.

Main contractors who win a building contract tender are responsible for negotiating with companies on the approved product list. It is recommended that companies on the approved product list meet with Hong Kong's main contractors as they select products from this list.

Housing Society

The Housing Society is an independent, non-profit organization, established in 1948, which provides housing for specific low-income groups in Hong Kong. Annual production for the past five years averaged some 3100 units.

The Housing Society is able to provide diversified housing at affordable prices, by receiving support from the Hong Kong government in the form of land grants, concessionary land premiums and low interest loans.

The Society has no in-house professionals and therefore employs external architects and engineers to work on projects. Architects are at liberty to select their building products. All major Hong Kong architectural firms are employed by the Housing Society.

Hong Kong Hospital Authority (HKHA)

The HKHA is responsible for managing all 44 public hospitals in Hong Kong. It is independent, but accountable to the Hong Kong government. It had a $6 billion operating budget in 1998-1999, and is responsible for building new hospitals, as well as for renovation, extension, improvement work and management for existing hospitals. The HKHA maintains a list of approved consultants.

Government Procurement Regulations

Hong Kong's tendering system is open, objective and fair, with no preference given to any particular source, country or organization. Tender quotations must be submitted in strict privacy under sealed cover before the stipulated closing date and time. Payment is usually by cheque within 30 days of receiving the goods, although the terms can usually be negotiated.

Hong Kong is also a signatory to the WTO Agreement on Government Procurement, the terms of which have required Hong Kong to implement a bid protest system. Tenders may be invited from contractors or suppliers either to carry out construction or to supply materials/equipment.

There are standard procedures that must be strictly followed when tendering for government projects. A government building project is usually "gazetted" — i.e. tenders are invited. The invitation is only open to a list of contractors that have been previously approved by the government for building, civil engineering and water works projects.

The Government of the Hong Kong Special Administrative Region (HKSAR) launched its Electronic Tendering System (ETS) on April 7, 2000. This Internet-based government procurement service represents Hong Kong's first government-to-business application. The new system is capable of issuing notification of GSD tenders, specifications and tender documents to potential suppliers, and can also receive tender offers on-line.

Through the ETS Web site, overseas and local suppliers now have access to the HKSAR Government tender notices, contract award notices and other related information. They can download tender documents and specifications, and can also submit bids directly via the Internet. Canadian suppliers interested in doing business with the GSD can subscribe to ETS on-line at www.ets.com.hk.

MARKET LOGISTICS

Channels of Distribution

Due to the high level of local competition, Canadian firms are advised to establish some type of local presence, whether it is a branch office or an agent or distributor. Business in Hong Kong (and elsewhere in Asia) requires relationships that can only be developed with some sort of full-time presence. Prompt after-sales service is also crucial to succeeding in this market.

In spite of its complexity, Hong Kong's building materials distribution network is well-established, and it can be extended to Mainland China. The market for building

supplies/materials is distributed as follows: agents/importers/distributors handle about 85% while manufacturers and contractors manage about 10% and 5% respectively.

Direct Sales

Office rents and salaries in Hong Kong are among the highest in Asia, making it very expensive to maintain a representative office there. However, Canadian manufacturers whose products can only be applied according to a special formula or whose products require highly skilled technicians and specialized installation (e.g. security systems, building management systems) usually market their products themselves. Additionally, foreign manufacturers with large market shares also find it more efficient to represent themselves.

Distributors, Agents and Sales Representatives

The use of agents and distributors is an effective method of doing business in Hong Kong. Due to the time constraints for completing projects, property developers and main contractors will deal with oversea suppliers only for products not easy to find in Hong Kong. Canadian companies can, therefore, reduce overhead costs and the need for a direct physical presence by relying on agents who will take orders in another company's name.

In Hong Kong, many distributors also act sub-contractors.

In addition to agents and distributors, several building product importers in Hong Kong act as buying agents for Chinese companies. These business partnerships can give Canadian companies access to the vast opportunities in China.

There are many types of agents and distributors in Hong Kong, ranging from those who simply stock retail stores with standard items to agents who provide sales, engineering and technical support for the more complex systems. It is also common for a single company to deal in a wide variety of products in a particular sector.

In evaluating whether an agent is likely to be suitable, suppliers should ensure that agents are able to:

- provide warehousing facilities that enable them to cope with the delivery of bulk orders and ad hoc orders;
- provide stock financing;
- sell aggressively by being in frequent contact with architects, developers and contractors;
- have appointed subcontractors who are themselves in frequent contact with developers and architects;
- have office space to display some of the products; and

- be well advertised in manuals and product catalogues.

Establishing a commercial relationship with local agents and distributors in Hong Kong is a simple process. Virtually any contractual arrangement is acceptable and enforceable, although it is advisable to bring in local legal counsel for more complex matters and transactions. Contracts typically include provisions regarding exclusivity and sales territories, the handling of proprietary information, expected levels of sales activity, the duration of the contract, payment terms, quality control and the cancellation notice period.

Joint Ventures & Local Offices

Forming a joint venture or a partnership with local operating companies represents an effective way of facilitating the success of major projects, competing for major projects and gaining greater insight into the Hong Kong market. More importantly, companies looking to sell more sophisticated products needing long-term maintenance, technical support and installation, or that are seeking to become involved in construction projects are strongly advised to seek a local partner or establish a local office to better serve to clients and adapt to changing market needs.

Foreign companies involved in joint ventures or partnerships are free to incorporate operations, register branches of foreign operations or set up representative offices in Hong Kong. Although joint ventures tend to be more profitable, they require patience and adequate financing. The most important step is to find a good local partner who is well-connected in the industry.

Due to lower labour and transport costs, establishing a production base in neighbouring China also provides the significant advantage of being able to compete successfully with other products manufactured regionally and locally (including in China).

Another advantage of having a production base near Hong Kong is the fact that orders can be delivered faster. This is especially important in the case of interior fittings for hotels. Interior decorators responsible for these projects may change specifications with short notice and thus, often rely on short delivery dates.

However, if a large customer base is not anticipated, high labour and rental fees may make the establishment of a full-time presence in Hong Kong less feasible. Canadian companies seeking more information on establishing an office in Hong Kong may contact the Overseas Companies Section, Companies Registry in Hong Kong (**see Key Contacts and Support Services**).

Market-entry Considerations

For many Canadian products and services, initial market penetration in Hong Kong does not require enormous capital investments. Given the fact that Hong Kong is a "free port" and one of the world's best examples of an open market economy, with virtually no barriers, duties or tariffs, a well-managed market entry program with a moderate investment in market development is generally all that is initially required.

The market for construction/architectural service firms is also quite open. However, due to its open nature, Hong Kong is among the most competitive and price-sensitive markets in the world. Companies considering the market should also be aware that the Hong Kong business climate is extremely fast-paced. Decisions are made quickly and companies need to be able to respond to inquiries immediately or they risk losing the market to faster-moving suppliers.

Reputation and reliability are extremely important in the Hong Kong market. Canadian companies are advised to participate in high-profile projects in order to gain exposure in the market and to build the company's reputation. Exposure to local developers, architects and contractors could also prove to be beneficial.

With re-exports from Hong Kong to China increasing steadily over the past few years, Hong Kong is still regarded as the ideal springboard to accessing opportunities in southern China. A large proportion of re-exports to China consists of building products and construction equipment to cater for China's imminent building and construction surge. For example, it is estimated that only 55% of the wood imported in Hong Kong is consumed domestically (approximately 10% is used for actual formwork and 45% is used for interior decoration and renovation). The remaining 45% is re-exported to China.

Tariffs and Import Duties

There are no tariffs, duties, taxes or quotas on imported building products. There are no restrictions on foreign ownership of capital, nor are there export performance or local content requirements.

No import duties are imposed on timber imported into Hong Kong.

Import Regulations

There is no legislation or practice that restricts access to the Hong Kong markets by foreign exporters or that mandates preference for locally manufactured products. Hong Kong companies (and the Hong Kong government itself) do not have any predisposition to any one supplier — and are far more inclined to purchase based on the terms of price, delivery, quality and service. Technical and safety standards are not used as a

political or trade control mechanism, and they are normally accommodated with little difficulty.

Suggested Business Practices

It is essential for Canadian businesses to cultivate strong personal ties and to build trust and respect with business associates in order to succeed in the Hong Kong market.

There has been a tendency for foreign firms operating in Hong Kong to rely heavily on English when conducting business. However, following the handover to China and the high degree of trade dependency on mainland China, Canadian firms are encouraged to provide technical catalogues and documents written in Chinese characters. Company brochures are very useful when visiting Hong Kong for the first time. It is useful to have business cards printed in both traditional Chinese and English since they are exchanged far more frequently in Asia than they are in the West.

As a general rule, smaller companies tend to focus on low prices to attract business, while larger firms emphasize after-sales support. However, the recent devaluation of Asian currencies and the reduction of technology production rates in the region has meant that all Canadian firms should reassess their pricing strategies in order to ensure a high level of competitiveness.

Local Standards, Certificates or Registrations

Construction Standards

U.K. standards, by tradition, are specified for most major and public works projects in Hong Kong. Increasing emphasis is being placed on international standards, and companies that have obtained ISO 9000/9002 endorsement will have a marketing edge, particularly for public projects.

Product Standards

Few product safety standards are required for the domestic Hong Kong market. What little there are relate to fire control (gas and electricity) in the city's high-rise buildings. Other standards of quality and safety control imposed on domestic manufacturers are for goods made for export or re-export outside Hong Kong. Currently, building materials and electrical/mechanical supplies have to meet U.K. standards. However, Hong Kong is gradually recognizing other standards, and Canadian companies seeking to export to Hong Kong should therefore consult with potential agents and customers to determine the exact standards required.

Buildings Ordinance and Regulations

The Buildings Ordinance (Cap. 123) is administered by the Buildings Department of the HKSAR Government. The Ordinance covers regulations on administration, construction, demolition and planning of buildings, private streets and access roads; lifts and escalators; refuse storage chambers and chutes; standards of sanitary fitments, plumbing, drainage works and latrines; ventilating systems; oil storage installations and energy efficiency. More information is available at www.info.gov.hk.bd/english.

Building Energy Efficiency Regulation

Hong Kong's Building Energy Efficiency Regulation came into effect on July 21, 1995. This regulation imposes requirements relating to the energy efficiency of buildings, and applies to commercial buildings[11] and hotels. The main requirement is that the buildings be constructed to a suitable overall thermal transfer value. The regulation also requires relevant information about a building's energy efficiency to be submitted to the Building Authority along with the plans.

Labelling and Weights and Measures

Non-tariff barriers such as labelling requirements are not onerous to comply with.

While imperial and local Chinese weights and measures are sometimes used, the Hong Kong government uses and encourages the use of the metric system. The territory has even been promoting the adoption of a metric system of units, the International System of Units (SI). Adoption of SI in areas related to length, area, volume, capacity, force, pressure and energy/power is already in place.

Compatibility

Canadian companies should be aware that compatibility of building materials and technologies should be addressed as a major issue in this market. For example, imported IBS components are not always fully compatible with the appliances and systems that customers have already installed.

Moreover, kitchens in Hong Kong households are very small compared to Canadian standards — about 10 m^2 — and therefore require smaller cabinets. Counters are normally four inches lower. Kitchens in Hong Kong also require more grease-resistant

[11] Commercial buildings include offices, shops, department stores, places of public entertainment, places of public assembly, restaurants and any other buildings used for commercial purposes. Excluded are domestic premises, industrial buildings, schools, parking garages, places used for bulk storage and utility buildings such as power stations and substations

features due to the local cooking style. Many Hong Kong companies have asked for additional accessories to be included to help them fit the product better. Some end users only buy parts of a Canadian product and try to combine it with domestic products in an attempt to cut costs. Kitchen cabinets in knock-down form are preferred over the pre-assembled due to the freight cost involved. Canadians companies are therefore encouraged to visit Hong Kong to determine if their products are compatible with local standards or to determine how consumers will use their product.

Export Credit Risks, Restrictions on Letters of Credit or Currency Controls

Suppliers are encouraged to obtain letters of credit or sight draft terms when dealing with buyers with whom they are not familiar. As the region's leading financial and trading centre, letters of credit, document collection and international remittance are widely available in Hong Kong. Requests for letters of credit are a commonly held business practice throughout Hong Kong, and will not be seen as a sign of mistrust. Open accounts have emerged as the preferred means of doing business around the world, and as a means of eliminating the costs associated with letters of credit. While Hong Kong buyers have not been as quick to move to this method of payment, it is becoming increasingly common.

PROMOTIONAL EVENTS

International exhibitions held in Hong Kong represent good opportunities for Canadian companies to market products and to find agents and distributors.

Event/Description	Organizer
IBEX – 17th International Building and Construction Exposition May 16-19, 2001 (Bi-annual) Hong Kong Convention and Exhibition Centre IBEX is the biggest building and construction trade show in Hong Kong.	Reed Exhibition Ltd. 19/F 8 Commercial Plaza 8 Sun Yip St. Chai Wan, Hong Kong Tel.: (852) 2824-0330 Fax: (852) 2824-0178 Web Site: www.hkinternet.net/ibex97 or www.reedexpo.com
Asian Airvex 2002 The 6th Asian International Air-Conditioning, Ventilation, Heating and Refrigeration Show **Asian Building Services 2002** The 5th Asian International Building Services and Automation Technology Exhibition **Asian Elenex 2002** The 10th Asian International Power, Electrical and Electronic Engineering Show **Asian Securitex 2002** The 7th Asian International Security, Safety and Fire Protection Show and Conference **Asian Luminex 2002** The 7th Asian International Architectural, Commercial Lighting Technology Show May/June, 2002(Bi-annual) Hong Kong Convention and Exhibition Centre Focus on electrical, lighting, security and HVAC/R.	Hong Kong Exhibition Services Ltd. 9/F Shiu Lam Building 23 Luard Rd. Wanchai, Hong Kong Tel.: (852) 2804-1500 Fax: (852) 2528-3103 E-mail: exhibit@hkesmontnet.com.hk
Asiaflor October 2001 Asia Pacific Exhibition of Decorative Flooring, Carpets and Rugs Hong Kong Convention and Exhibition Centre Wanchai, Hong Kong	Messe Frankfurt (H.K.) Ltd. Room 1808 China Resources Building 26 Harbour Road Wanchai, Hong Kong Tel: (852)2238-9934/2802-7728 Fax: (852)2598-8771 Email: mfhkfair@netivgator.com

Event/Description	Organizer
Conferences	
International Conference on Construction Construction for Tomorrow's City June 91-21, 2001 Hong Kong Convention and Exhibition Centre	**Conference Secretarial** MV Destination Management Ltd. Room 609, Austin Tower 22 Austin Avenue Tsimshatsui, Kowloon Hong Kong Tel: (852)2735-8118 Fax: (852)2735-8282 Email: moreview@mvdmc.com Web Site: www.mvdmc.com/icc/
Design Day **ThemeWorks - a design symposium on themed environments** October 26, 2000 Hong Kong Convention and Exhibition Centre	Hinge Marketing Ltd. 2/F., West Sincere Insurance Building 6 Hennessy Road Wanchai, Hong Kong Tel: (852)2520-2468 Fax: (852)2836-3327 Email: hinge@hingenet.com Web Site: www.deignday.hingenet.com

KEY CONTACTS AND SUPPORT SERVICES

Canadian Government Contacts

Consulate General of Canada – Hong Kong
13 Floor, Tower One
Exchange Square
8 Connaught Place
Central, Hong Kong
Contact: Eunice Wong, Commercial Officer (Building Materials, Construction Services, Architectural & Interior Design Services, Wood Products, Security Products, and Consumer products)
Tel.: (852) 2847-7454
Fax: (852) 2847-7441
E-mail: eunice.wong@dfait-maeci.gc.ca
Web Site: www.hongkong.gc.ca

Department of Foreign Affairs and International Trade
125 Sussex Dr.
Ottawa, ON K1A 0G2
Internet: http://www.dfait-maeci.gc.ca

China and Mongolia Division (PCM)
Tel.: (613) 996-7256
Fax: (613) 943-1068
Contact: Gregory Chin, Desk Officer
E-mail: gregory.chin@dfait-maeci.gc.ca

Market Support Division (TCM)
Tel.: (613) 996-0684
Fax: (613) 943-1103
Contact: Clem Srour, Trade Commissioner, Resource Industries
E-mail: Clem.srour@dfait-maeci.gc.ca

Canada Commercial Corporation (CCC)
50 O'Connor St., 11th Floor
Ottawa, ON K1A 0S6
Tel.: (613) 996-0034
Fax: (613) 995-2121
E-mail: info@ccc.ca
Web Site: www.ccc.ca

Canada Mortgage and Housing Corporation (CMHC) - National Office
700 Montreal Rd.
Ottawa, ON K1A 0P7
Tel.: (613) 748-2000
Fax: (613) 748-2098
Contact: Charles Chenard, Director
Web Site: www.cmhc-schl.gc.ca/cmhc.html

Canadian International Development Agency (CIDA)
200 Promenade du Portage
Hull, QC K1A 0G4
Web Site: www.acdi-cida.gc.ca

Business Co-operation Branch, Bureau for Asia
Tel.: (819) 997-7901
Fax: (819) 953-5024

Contracting Management Division
Tel.: (819) 997-7778
Fax: (819) 994-5395

Industrial Co-operation Program
Tel.: (819) 953-5444
Fax: (819) 953-5024
E-mail: info@acdi-cida.gc.ca

Export Development Corporation (EDC)
151 O'Connor St.
Ottawa, ON K1A 1K3
Tel.: 1-800-850-9626 or (613) 598-2500
Fax: (613) 598-6697
Web Site: www.edc.ca

Natural Resources Canada
580 Booth St., 13th Floor
Ottawa, ON K1A 0E4
Contact: Robin Sinha
Building Group, CETC
Tel.: (613) 943-2260
Fax: (613) 996-9909
E-mail: rsinha@nrcan.gc.ca
Web Site: www.NRCan-RNCan.gc.ca

National Research Council
Canadian Construction Materials Centre
Building M-24. Montreal Rd.
Ottawa, ON K1A 0P7
Tel.: (613) 993-6189
Fax: (613) 952-0268
Web Site: www.nrc.ca/irc

Canadian Business and Industry Contacts

Alliance of Manufacturers & Exporters Canada
75 International Boulevard, 4th Floor
Toronto, ON M9W 6L9
Tel.: (416) 798-8000
Fax: (416) 798-8050
Web Site: www.the-alliance.com

BC Wood Specialties Group
#5-15355 102A Avenue
Surrey, BC V3R 7K1
Tel.: (604) 583-8786
Fax: (604) 583-9916
Toll-free 1-877-422-9663
Web Site: www.bcwood.com/

Canadian Chamber of Commerce in Hong Kong
Suite 1003, Kinwick Centre,
32 Hollywood Road, Central, Hong Kong
Tel : (852) 2110-8700
Fax : (852) 2110-8701
Email : canada@cancham.org
Web Site: www.cancham.org

Canadian Construction Association (CCA)
75 Albert St., Suite 400
Ottawa, ON K1P 5E7
Tel.: (613) 236-9455
Fax: (613) 236-9526
Web Site: www.cca-acc.com/

Canadian Exporters Association
99 Bank St., Suite 250
Ottawa, ON K1P 6B9
Tel.: (613) 238-8888
Fax: (613) 563-9218

Canadian Manufactured Housing Institute (CMHI)
Suite 500
150 Laurier Ave West
Ottawa, ON K1P 5J4
Tel.: 613-563-3520
Fax: 613-232-8600
Web Site: www.cmhi.ca

Canadian Sheet Steel Building Institute (CSSBI)
652 Bishop St. North, Unit 2A
Cambridge, ON N3H 4V6
Tel.: (519) 650-1285
Fax: (519) 650-8081
Web Site: www.cssbi.ca

Canadian Window and Door Manufacturers Association (CWDMA)
27 Goulburn Ave.
Ottawa, ON K1N 8C7
Tel.: (613) 233-9804
Fax: (613) 233-1929
E-mail: info@cwdma.ca
Web Site: www.cwdma.ca/

The Canadian Wood Council
1400 Blair Place, Suite 210
Ottawa, ON K1J 9B8
Tel.: (613) 747-5544
Fax: (613) 747-6264
E-mail: kmccloskey@cwc.ca
Web Site: www.cwc.ca/english

Insulating Glass Manufacturers Association of Canada
27 Goulburn Ave.
Ottawa, ON K1N 8C7
Tel.: (613) 233-1510
Fax: (613) 233-1929
Contact: Bob Rivard, Executive Director
Web Site: www.igmac.ca/home.htm

Quebec Wood Export Bureau (Q-WEB)
979 de Bourgogne Ave.
Office 540
Sainte-Foy, QC G1W 2L4
Tel.: (418) 650-6385
Fax: (418) 650-9011
E-mail: info@quebecwoodexport.com
Web Site: www.quebecwoodexport.com

Thermal Insulation Association of Canada
National Administrator
P.O. Box 23020
Ottawa, ON K2A 4E2
Tel.: (613) 724-4834
Fax: (613) 562-1014
Contact: Donald Book

Hong Kong Government Contacts

Architectural Services Department
35/F Queensway Government Offices
66 Queensway, Hong Kong
Tel: (852) 2867-3628
Fax: (852) 2869-0289/2596-0365
Email: archsd@archsd.gov.hk
Web Site: www.archsd.gov.hk

Buildings Department
12/F., Pioneer Centre
750 Nathan Road
Kowloon, Hong Kong
Tel: (852) 2626-1616
Fax: (852) 2840-0451
Email: bdenq@bd.gcn.gov.hk
Web Site: www.info.gov.hk/bd

Civil Engineering Department
Civil Engineering Building
101 Princess Margaret Road
Homantin, Kowloon
Hong Kong
Tel: (852) 2762-5111
Fax: (852) 2714-0140
Email: ceinfo@ced.gcn.gov.hk
Web Site: www.info.gov.hk/ced

Customs and Excise Department
8/F, Harbor Building, 38 Pier Road
Central, Hong Kong
Tel: (852) 2852-3324/2815-7711
Fax: (852) 2542-3334
Web Site: www.info.gov.hk/customs/

Government Supplies Department
10/F., North Point Government Offices
333 Java Road
North Point, Hong Kong
Tel: (852) 2231-5105
Fax: (852) 2881-6591
Email: info@gsd.gcn.gov.hk
Web Site: www.info.gov.hk/gsd/index.htm

Housing Authority and Housing Department
Housing Authority Headquarters
33 Fat Kwong Street
Ho Man Tin
Kowloon, Hong Kong
Tel: (852) 2714-5119
Fax: (852) 2711-4111
Email: hkha@housingauthority.gov.hk
Web Site: www.info.gov.hk/hd

Hong Kong Housing Society
29/F World Trade Centre
280 Gloucester Road
Causeway Bay, Hong Kong
Tel: (852) 2839-7888
Fax: (852) 2882-2001
Web Site: www.hkhs.com

Hong Kong Trade Development Council

Head Office
38/F Office Tower, Convention Plaza
1 Harbour Road, Wan Chai
Hong Kong
Tel: (852) 2584 4333
Fax: (852) 2824 0249
E-mail: hktdc@tdc.org.hk
Web Site: www.tdctrade.com

Toronto Office:
G/F., Hong Kong Trade Centre
9 Temperance Street, Toronto, Ontario
M5H 1Y6 Canada
Tel: (416) 366-3594 / Fax: 366-1569

Vancouver Consultant Office:
Suite 904A-938 Howe Street
Vancouver, B.C., V6Z 1N9 Canada
Tel.: (604) 685-0883 / Fax: 331-4418

Hong Kong Economic and Trade Office (Toronto)
174 St George Street,
Toronto, Ontario,
M5R 2M7, Canada
Tel: (1) 416 924 5544
Fax: (1) 416 924 3599; 924 3542
E-mail: etotor@hketo.ca

Electrical & Mechanical Services Department
Energy Efficiency Office
11/F, 111 Leighton Road
Causeway Bay
Hong Kong
Tel.: (852) 2881-1565
Fax: (852) 2890-6081
Email: info@emsd.gov.hk
Web Site: www.info.gov.hk/emsd

Overseas Companies Section
Companies Registry
29/F Queensway Government Offices
66 Queensway, Hong Kong
Tel: (852) 2867-4655
Fax: (852) 2523-5629
Web Site: www.info.gov.hk/cr/

Publications Sales Section
Information Services Department
3-8/F., Murray Building
Garden Road
Hong Kong
Tel.: (852) 2842-8777
Fax: (852) 2598-7482
Web Site: www.info.gov.hk/isd/

Trade and Industry Department
Room 908 Trade & Industry Department Tower
700 Nathan Road
Kowloon, Hong Kong
Tel: (852)2392-2922/2398-5333
Fax: (852)2398-9173
Email: tidenq@tid.gcn.gov.hk
Web Site: www.info.gov.hk/tid

Territory Development Department
13/F., North Point Government Offices
333 Java Road
North Point, Hong Kong
Tel: (852)2231-4524
Fax: (852)2577-5562
Email: tddhqtr@tdd.gcn.gov.hk
Web Site: www.info.gov.hk/tdd

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Federation of Hong Kong Industries
Room 407-411, 4/F., Hankow Centre
5-15 Hankow Road
Tsimshatsui, Kowloon
Hong Kong
Tel.: (852) 2732-3188
Fax: (852)2721-3494
E-mail: fhki@fhki.org.hk
Web Site: www.fhki.org.hk

The Hong Kong Construction Association
3/F, 180 Hennessy Rd.
Wanchai, Hong Kong
Tel.: (852) 2572-4414
Fax : (852) 2572-7104
E-mail: admin@hkca.com.hk
Web Site: www.hkca.hingenet.com/

Hong Kong General Chamber of Commerce
22/F., United Centre
95 Queensway
Admiralty, Hong Kong
Tel.: (852) 2529-9229
Fax: (852) 2527-9843
Email: chamber@chamber.org.hk
Web Site: www.chamber.org.hk

Hong Kong Institute of Surveyors
Suite 510, Jardine House
1 Connaught Place
Central, Hong Kong
Tel: (852) 2526-3679
Fax: (852) 2868-4612
Web Site: www.hkis.org.hk

Hong Kong Institution of Architects
19/F., 1 Hysan Avenue
Causeway Bay, Hong Kong
Tel: (852) 2511-6323
Fax: (852) 2519-6011
E-mail: hkiasec@hkia.org.hk
Web Site: www.hkia.org

Hong Kong Institution of Engineers
9/F., Island Centre
1 Great George Street
Causeway Bay, Hong Kong
Tel: (852) 2895-4446
Fax: (852) 2577-7791
Web Site: www.hkic.org.hk

The Society of Builders Hong Kong
Rm 801/2, On Lok Yuen Building,
25 Des Voeux Road Central
Hong Kong
Tel.: (852) 2523-2081/2
Fax: (852) 2845-4749

Hong Kong Trade Development Council
38/F Office Tower, Convention Plaza
1 Harbour Road
Wanchai, Hong Kong
Tel: (852) 2584-4333
Fax: (852) 2824-0249
E-Mail: hktdc@tdc.org.hk
Web Site: www.tdctrade.com

Appendix A. Hong Kong's New Towns

New Town	Characteristics
Tsuen Wan	Tsuen Wan New Town covers Tsuen Wan, Kwai Chung and Tsing Yi Island with a total development area of about 2360 hectares. The current population of the new town is about 796 000, and is expected to grow to 860 000 within 10 years.
Sha Tin	Sha Tin has grown from a rural township of 30 000 people in the early 1970s to a major new community, including an extension at Ma On Shan, of about 630 000 people today. A population level of 670 000 should be reached by 2001. The total development area of Sha Tin and Ma On Shan is about 2000 hectares.
Tuen Mun	Tuen Mun is the westernmost new town in the New Territories mainland, covering a total development area of about 1920 hectares. About 70% of the town's present population of some 502 000 live in public housing developments. Within the next 10 years, more home ownership and private-sector participation schemes and public housing estates will be developed to provide accommodation for an additional 125 000 people.
Tai Po	Formerly a traditional market town. The current population of Tai Po is about 300 000 and this is envisaged to grow to nearly 330 000 upon full development. The new town has a development area of about 1270 hectares for residential, commercial, industrial, social, community and recreation facilities. It includes public housing and hospitals to the north of the town centre, and both public and private housing to the west and south. Tai Po Industrial Estate is designed to cater to high-tech industries, and most of the industrial lots have already been developed.
Fanling/ Sheung Shui	Fanling and Sheung Shui are former traditional market towns that now have a population of more than 230 000 residents. Upon full development, the population will reach about 260 000.The total development area is about 780 hectares, which includes residential, commercial, industrial, social, community and recreational facilities. The major industrial area of On Lok Tsuen is under rapid development. New private housing developments are joining the market, and public housing development continues in the south end.
Yuen Long	Yuen Long's current population of 164 000 people is expected to grow to about 280 000 upon full development. The total development area is about 1170 hectares.
Tseung Kwan O	The population of the new town of Tseung Kwan O is currently 220 000 and is expected to reach about 520 000 upon full development in 2011. The total development area is about 1090 hectares. Tai Chik Sha and the southern part of Siu Chik Sha are being developed for industrial use.
Tin Shui Wai	Engineering infrastructure and building works for the initial development of 220 hectares have been completed to house and accommodate about 150 000 people. Further developments on the northern part of the site are in progress. A total of about 92 hectares of land have been identified for housing developments to accommodate an additional population of 190 000. This will increase the total population of Tin Shui Wai to 340 000.

New Town	Characteristics
Tung Chung/ Tai Ho	Tung Chung and Tai Ho in North Lantau are being developed in phases into a new town with a population of 320 000 by 2011.The development area of the new town is expected to reach about 760 hectares. Construction works for Phase I development were completed in 1997 to provide a community of about 20 000 people in Tung Chung to support the Hong Kong International Airport at Chek Lap Kok. Construction for Phase II development is in progress, for completion by 2001. It will house a population of about 67 000.

Source: *New Towns and Rural Townships,* downloaded from the Territory Development Department **http://www.info.gov.hk/tdd/text/towns/** , September 5, 2000.

Appendix B. Major Architects in Hong Kong

Dennis Lau & Ng Chun Man Architect & Engineering (HK) Ltd
34-35/F Hennessy Centre
Wanchai, Hong Kong
Tel.: (852) 2895-6888
Fax: (852) 2576-4074
Contact: Dennis Lau, Chairman & Managing Director

P&T Architects & Engineers
25/F OTB Building
160 Gloucester Rd.
Wanchai, Hong Kong
Tel.: (852) 2575-6575
Fax: (852) 2891-3834
Contact: Nicholas Burns, Director

Simon Kwan & Associates Ltd
2001 Leighton Centre
77 Leighton Rd.
Causeway Bay, Hong Kong
Tel.: (852) 2882-2500
Fax: (852) 2882-4380
Contact: Simon Kwan, Director

Rocco Design Ltd.
20/F., Southmark
11 Yip Hing Street
Wong Chuk Hang
Hong Kong
Tel: (852) 2528-0128
Fax: (852) 2529-2315

Wong & Ouyang (HK) Ltd
27/F Dorset HOuse
Taikoo Place
979 King's Rd.
Hong Kong
Tel.: (852) 2968-1881
Fax: (852) 2968-1771
Contact: Leslie Ouyang, Director

Wong Tung & Partners Ltd
5/F Cityplaza 3
Taikoo Shing
Quarry Bay, Hong Kong
Tel.: (852) 2803-9888
Fax: (852) 2513-1728
Contact: Bill Wong, Chairman

Anthony Ng Architects Ltd.
22/F., Emperor Group Centre
228 Hennessy Road
Wanchai, Hong Kong
Tel: (852) 2821-6128
Fax: (852) 2865-4987
Contact: Mr. Anthony Ng, Director

Liang Peddle Thorp Architects & Planners Ltd.
19/F., 1063 King's Road
Quarry Bay
Hong Kong
Tel: (852) 2861-1728
Fax: (852) 2529-6419
Contact: Mr. Keith Griffiths, Managing Director

Appendix C. Major Construction Companies in Hong Kong

Chevalier International Holdings Ltd.
22/F., Chevalier Commercial Centre
8 Wang Hoi Road
Kowloon Bay, Kowloon
Hong Kong
Tel: (852) 2318-1818
Fax: (852) 2757-5626
Web Site: www.chevalier.com

Dragages et Travaux Publics (HK) Ltd.
11/F., Island Place Tower
510 King's Road
North Point, Hong Kong
Tel: (852) 2511-4261
Fax: (852) 2519-0520
Web Site: www.bouyguesasia.com

Gammon Construction Ltd.
28/F., Devon House, Taikoo Place
979 King's Road
Quarry Bay, Hong Kong
Tel: (852) 2516-8823
Fax: (852) 2516-6260
Web Site: www.gammonhk.com

Hip Hing Construction Co. Ltd.
29/F., New World Tower
16-18 Queen's Road
Central, Hong Kong
Tel: (852) 2525-9251
Fax: (852) 2845-9295
Web Site: www.hiphing.com.hk

Hong Kong Construction Co. Ltd.
Room 1001 Seaview Commercial Building
21-24 Connaught Road West
Hong Kong
Tel: (852) 2546-8877
Fax: (852) 2546-7733

Paul Y. - ITC Construction Holdings Ltd.
31/F., Paul Y. Centre
51 Hung To Road
Kwun Tong, Kowloon
Hong Kong
Tel: (852) 2831-8338
Fax: (852) 2833-1030

Shui On Group Ltd.
34/F., Shui On Centre
6-8 Harbour Road
Wanchai, Hong Kong
Tel: (852) 2879-1888
Fax: (852) 2802-4396
Web Site: www.shuion.com.hk

Appendix D. Major Property Developers in Hong Kong

Cheung Kong (Holdings) Ltd.
7-12 Cheung Kong Centre
2 Queen's Road
Central, Hong Kong
Tel: (852) 2128-8888
Fax: (852) 2845-2940
Web Site: www.cheungkong.com.hk

Hang Lung Development Co. Ltd.
28/F., Standard Chartered Bank Building
4 Des Voeux Road
Central, Hong Kong
Tel: (852) 2879-0111
Fax: (852) 2868-6036

Henderson Land Development Co. Ltd.
6/F., World Wide House
19 Des Voeux Road
Central, Hong Kong
Tel: (852) 2908-8888
Fax: (852) 2908-8838
Web Site: www.hld.com

Hutchison Whampoa Ltd.
22/F., Hutchison House
10 Harcourt Road
Hong Kong
Tel: (852) 2128-1188
Fax: (852) 2128-1766
Web Site: www.hutchison/whampoa.com

New World Development Co. Ltd.
32/F., New World Tower
16-18 Queen's Road
Central, Hong Kong
Tel: (852) 2523-1056
Fax: (852) 2810-4673
Web Site: www.nwd.com.hk

Sino Group
11-12/F., Tsimshatsui Centre
Salisbury Road
Tsimshatsui, Kowloon
Hong Kong
Tel: (852) 2721-8388
Fax: (852) 2724-4136
Web Site: www.sino-land.com

Sun Hung Kai Properties Ltd.
46/F., Sun Hung Kai Centre
30 Harbour Road
Wanchai, Hong Kong
Tel: (852) 2827-8111
Fax: (852) 2827-2303
Web Site: www.shkp.com.hk

Swire Properties Ltd.
33/F., One Pacific Place
88 Queensway
Hong Kong
Tel: (852) 2844-3888
Fax: (852) 2810-1547
Web Site: www.swireproperties.com

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SOURCING DIRECTORIES/PUBLICATIONS

Architects and Designers Catalogue (Annual)
Publisher: TPL Corporation (HK) Ltd.
10/F., Seaview Estate, Block C
2-8 Watson Road, North Point
Hong Kong
Tel: (852) 2566-8381
Fax: (852) 2508-0603
Web Site: web3.asia1.com.sg/timesnet

Hong Kong Builder Directory (Annual)
Publisher: TPL Corporation (HK) Ltd.
Block C, 10/F., Seaview Estate
2-8 Watson Road
North Point, Hong Kong
Tel: (852) 2566-8381
Fax: (852) 2508-0603
Web Site: web3.asia1.com.sg/timesnet

Pace Source Product Directory (Annual)
Publisher: PACE Publishing Ltd.
Room 607-8, 6/F., Block B, Ming Pao Industrial Centre
18 Ka Yip Street, Chai Wan
Hong Kong
Tel: (852) 2897-1688
Fax: (852) 2897-2888
Web Site: www.pacesource.com

TRADE JOURNALS

Hong Kong Engineer (Monthly)
Printers' Circle Ltd.
Unit 401-5, Paramount Building
12 Ka Yip Street
Chaiwan, Hong Kong
Tel: (852)2562-6138
Fax: (852)2565-9976
Web Site: www.printerscircle.com.hk

Building Journal Hong Kong China (Monthly)
Publisher: China Trend Building Press Ltd.
Room 901 C C Wu Building
Wanchai, Hong Kong
Tel: (852) 2802-6299
Fax: (852) 2802-6458
Web Site: www.building.com.hk

Construction & Contract News (Monthly)
Publisher: China Trend Building Press Ltd.
Room 901 C C Wu Building
Wanchai, Hong Kong
Tel: (852) 2802-6299
Fax: (852) 2802-6458
Web Site: www.building.com.hk

Asian Architect and Contractor (Monthly)
Publisher: Thomson Press Hong Kong Ltd.
Room 202-3, 2/F., Hollywood Centre
Sheung Wan, Hong Kong
Tel: (852) 2815-9111
Fax: (852) 2851-1933
Web Site: www.thomsonpress.com.hk

Hinge (Monthly)
Publisher: Hinge Marketing Ltd. (Hong Kong)
2/F., West, Sincere Insurance Building
6 Hennessy Road
Wanchai, Hong Kong
Tel: (852) 2520-2468
Fax: (852) 2836-3327
Web Site: www.hingenet.com

OTHER REFERENCE MATERIAL

Useful Internet Sites

Architectural Services Department of HK: **http://www.archsd.gov.hk**

Building Department: **http://www.info.gov.hk/bd/english/index.html**
(Tender Notices: **http://www.info.gov.hk/bd/english/whats.html**)

Building Energy Standards and Codes (BESC): **http://arch.hku.hk/research/BEER/besc.htm**

Buildings in HK: **http://www.building.com.hk/plibrary/index.html**

Canada-China Business Council: **http://www.ccbc.com**

Canada's Window on China: **http://www.canada.org.cn**

Canadian Chamber of Commerce in Hong Kong: **http://www.cancham.org**

Consulate General of Canada in Hong Kong:
http://www.dfait-maeci.gc.ca/dfait/missions/hongkong/home.htm or **www.hongkong.gc.ca**

Civil Engineering Department: **http://www.info.gov.hk/ced**

Doing Business in Hong Kong: **http://www.business.gov.hk/textmode/english/index.htm**

Electrical & Mechanical Services Department: **http://www.info.gov.hk/emsd/index.htm**

ExportSource: **http://exportsource.gc.ca**

Government Information Services: **http://www.info.gov.hk**

Hong Kong Canada Business Association: **http://www.hkcba.com**

Hong Kong Commerce and Industry Bureau: **http://www.info.gov.hk/cib**

Hong Kong Construction Association: **http://www.hkca.hingenet.com**

Hong Kong Daily: **http://www.hongkongdaily.com**

Hong Kong Institute of Building: **http://www.hkir.com/hkiob/index.html**

HK's Intelligent Building Research Centre: **http://www.jcibrc.org.hk/ibrc**

Hong Kong Monitor: **http://www.hkcba.com/monitor**

Hong Kong Trade Development Council: **http://www.tdc.org.hk**

Housing Bureau: **http://www.info.gov.hk/hb**

Pace Source Product Directory **http://www.pacesource.com**

Selling to the Hong Kong SAR Government: **http://www.info.gov.hk/gsd/index.htm**

Studies on Buildings in Hong Kong: **http://arch.hku.hk/teaching/case.htm#Studies on Buildings in Hong Kong**

Territory Development Department: **http://www.info.gov.hk/tdd/index.htm**

READER EVALUATION

Please help the Market Research Centre to produce market reports which meet your information needs by completing this evaluation form and returning it by fax (613) 943-1103. Thank you for your valuable input.

1. How did you obtain a copy of this market report?
   - ☐ InfoCentre FaxLink system
   - ☐ InfoCentre help line
   - ☐ Local government office
   - ☐ Government Internet site
   - ☐ Other: _____

2. How would you describe this market report?

	Strongly agree	Agree	No opinion	Disagree	Strongly disagree
Useful	☐	☐	☐	☐	☐
Complete	☐	☐	☐	☐	☐
Well organized	☐	☐	☐	☐	☐
Well written	☐	☐	☐	☐	☐
Ideal length	☐	☐	☐	☐	☐

3. In what form do you prefer to obtain these reports?
   - ☐ Print
   - ☐ Electronic

4. Based on the information in this report, what specific action(s) does your organization plan to take in this market? Check all that apply.
   - ☐ Seek an agent/distributor
   - ☐ Visit the market
   - ☐ Do more research
   - ☐ Other: _____
   - ☐ Contact Canadian trade office abroad
   - ☐ Participate in a trade show abroad
   - ☐ Nothing

5. What other market reports would be of benefit to your organization? Please identify specific products and countries. _____

6. Which of the following categories best describes your organization? Check one only.
   - ☐ Processor/manufacturer
   - ☐ Trading house
   - ☐ Export service provider
   - ☐ Industry/trade association
   - ☐ Government
   - ☐ Student/academia
   - ☐ Consultant
   - ☐ Other: _____

7. What were your organization's total sales last year, in Canadian dollars?
   - ☐ Less than $10 million
   - ☐ More than $50 million
   - ☐ $10 million to $50 million
   - ☐ Not applicable

Additional comments/suggestions for improvement: _____

OPTIONAL — The name of your organization is: _____